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October 9, 2007

The Honorable Gregory M. Sleet
United States District Court
844 King Street
Wilmington, Delaware 19801

VIA E-FILING

Re: *U.S. Philips Corporation v. Eastman Kodak Company*, C.A. No. 06-251-GMS

Dear Chief Judge Sleet:

Pursuant to the Court's February 2, 2007, Scheduling Order (D.I. 18), plaintiff U.S. Philips Corporation ("Philips") respectfully requests permission to file and brief motions for summary judgment on the following points:

- That claims 3, 4, 7, 8, and 11 of Philips' U.S. Patent No. 4,901,075 ("the '075 patent") are infringed by Kodak's products that implement the baseline sequential mode of the JPEG standard, ISO/IEC 10918-1, as described in Annex F ("JPEG baseline sequential mode").
- That Kodak's affirmative defenses and counterclaims based on the premise that Philips was required to, but did not, identify the '075 patent (or a corresponding foreign equivalent of the patent, or an application leading to the patents) to the standards-setting organizations' committees that focused on developing the JPEG standard are insufficient or fail to state a claim, specifically Kodak's affirmative defenses of equitable estoppel, implied license, waiver and estoppel, and unclean hands, and counterclaims for equitable estoppel, implied license, deceptive trade practices, fraud, and negligent misrepresentation.

Infringement of the '075 Patent

Defendant Eastman Kodak Company's ("Kodak's") products infringe claims 3, 4, 7, 8, and 11 of the '075 patent. Kodak admits that it manufactures and has manufactured products that utilize or implement the JPEG baseline sequential mode. *See* Ex. 1, Defendant Eastman Kodak Company's Third Supplemental Response to Plaintiff U.S. Philips Corporation's First Set of Interrogatories (Nos. 1, 4, and 10). Furthermore, the parties do not dispute how the JPEG

baseline sequential mode operates as defined by the JPEG standard, Annex F (attached as Ex. 2). Therefore, if the asserted claims of the '075 patent cover this specific technique described in the JPEG standard, then Kodak products that implement or utilize that portion of the standard necessarily infringe.

Philips has demonstrated how the JPEG baseline sequential mode is literally covered by the asserted claims, which should be construed consistent with the constructions offered by Philips in the Final Joint Claim Chart. On April 6, 2007, Philips provided Kodak with a claim chart demonstrating how claims 3, 4, 7, 8, and 11 are infringed by products that implement the JPEG baseline sequential mode. *See* Ex. 3, Plaintiff U.S. Philips Corporation's Objections and Responses to Defendant Eastman Kodak Company's First Set of Interrogatories to Plaintiff U.S. Philips Corporation. Kodak has not offered any evidence or argument challenging Philips' infringement contentions. On February 2, 2007, Philips requested by its Interrogatory No. 5, *inter alia*, Kodak's non-infringement contentions. *See* Ex. 4, Plaintiff U.S. Philips Corporation's First Set of Interrogatories. In its response, Kodak did not provide a claim chart. *See* Ex. 5, Defendant Eastman Kodak Company's Response to Plaintiff U.S. Philips Corporation's First Set of Interrogatories. Kodak has not supplemented its response to that interrogatory or otherwise disputed the correctness of Philips' infringement contentions.

Thus, the only issue that must be determined in order to resolve the issue of infringement is claim construction, which is a matter of law that does not raise any genuine issues of disputed fact. Given Kodak's failure to offer evidence or otherwise dispute Philips' infringement contentions, and Kodak's admission that its products utilize or implement the JPEG baseline sequential mode, there are no issues of material fact with respect to Kodak's infringement of claims 3, 4, 7, 8, and 11 of the '075 patent.

Kodak's Disclosure-Based Defenses and Counterclaims

Kodak asserts several affirmative defenses and counterclaims based on its core premise that Philips was required to, but did not, identify the '075 patent (or a corresponding foreign equivalent of the patent, or an application leading to the patents) to the standards-setting organizations' committees that focused on developing the JPEG standard: equitable estoppel (Aff. Def. 4, Cclm. 3); implied license (Aff. Def. 6, Cclm. 4); waiver and estoppel (Aff. Def. 7); unclean hands (Aff. Def. 8); deceptive trade practices (Cclm. 5); fraud (Cclm. 6); and negligent misrepresentation (Cclm. 7). Philips requests permission to seek summary judgment holding those defenses insufficient, and striking those counterclaims for failure to state a claim for relief, because no material factual dispute exists that their core premise, which is a key required element of proof for each of these defenses and counterclaims, fails:

- no Philips' business units proposed any technology for the JPEG standard;
- no one from any Philips' business units actively participated in the standards-setting committees that focused on the JPEG standard;

- the people from various different Philips' business units who on a few occasions were present at meetings of the standards-setting committees that focused on the JPEG standard did not know of the patent or patent application (or corresponding foreign patents or applications) leading to the '075 patent;
- the standards-setting organizations' rules did not require anyone employed by a Philips' business unit to search for Philips' patents or patent applications in connection with the development of the JPEG standard; and
- the standards-setting organizations' rules did not require anyone employed by a Philips' business unit to identify to the organizations any Philips' patents or patent applications in connection with the development of the JPEG standard.

Respectfully,

/s/ *Lauren E. Maguire*

Lauren E. Maguire (I.D. #4261)

Enclosures
184841.1

cc: Francis DiGiovanni, Esquire (by hand; w/enc.)
Thomas W. Winland, Esquire (via electronic mail; w/enc.)
John Allcock, Esquire (via electronic mail; w/enc.)
Timothy W. Lohse, Esquire (via electronic mail; w/enc.)

EXHIBIT 1

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE

U.S. PHILIPS CORPORATION, Plaintiff, v. EASTMAN KODAK COMPANY, Defendant.	)	Civil Action No. 06-00251-GMS

DEFENDANT EASTMAN KODAK COMPANY'S THIRD SUPPLEMENTAL RESPONSE TO PLAINTIFF U.S. PHILIPS CORPORATION'S FIRST SET OF INTERROGATORIES (Nos. 1, 4 and 10)

Pursuant to Rule 33 of the Federal Rules of Civil Procedure, Defendant Eastman Kodak Company ("Kodak") hereby supplements its responses to the First Set of Interrogatories ("Interrogatories") propounded by Plaintiff U.S. Philips Corporation ("Philips"), specifically Nos. 1, 4 and 10, as follows:

PRELIMINARY STATEMENTS

1. This Third Supplemental Response to Interrogatory Nos. 1, 4 and 10 supersedes and replaces any and all prior responses by Defendant Eastman Kodak Company to Plaintiff U.S. Philips Corporations Interrogatory Nos. 1, 4 and 10.

2. Kodak's responses to Philips' Interrogatories are made to the best of Kodak's present knowledge, information and belief. Kodak reserves the right to supplement and amend these responses should future investigation indicate that such supplementation or amendment is necessary. Kodak's responses should in no way be considered prejudicial in relation to further discovery, research, analysis or production of evidence.

3. Kodak's responses are made solely for the purpose of and in relation to this action. Each response is given subject to all appropriate objections including, but not limited to, objections concerning privilege, competency, relevancy, materiality, propriety and admissibility. All objections are reserved and may be interposed at any time.

4. Kodak incorporates by reference each and every general objection set forth below into each and every specific response. From time to time a specific response may repeat a general objection for emphasis or some other reason. The failure to include any general objection in any specific response shall not be interpreted as a waiver of any general objection to that response.

5. By responding to Philips' Interrogatories, Kodak does not waive any objection that may be applicable to: (a) the use, for any purpose, by Philips of any information or documents given in this response to Philips' Interrogatories; or (b) the admissibility, relevancy or materiality of any of the information or documents at issue in this case.

GENERAL OBJECTIONS

1. Kodak objects to each and every Interrogatory, and to Philips' instructions and definitions, to the extent that they purport to impose additional burdens or duties on Kodak that exceed the scope of reasonable and permissible discovery under the Federal Rules of Civil Procedure, the Local Civil Rules for the District of Delaware, or the Individual Rules of the Judge(s) hearing this matter.

2. Kodak objects to each and every Interrogatory to the extent they seek information protected by attorney-client privilege, the work product immunity doctrine, or any other applicable law, protection or doctrine. The production of any privileged information or document by Kodak is unintentional, and Kodak does not intend to waive any applicable objection or privilege as a result of such production or disclosure.

3. Kodak objects to each and every Interrogatory to the extent it is overly broad or unduly burdensome or oppressive, particularly when the Interrogatory is unduly burdensome in view of Kodak's cost necessary to investigate weighed against Philips' need for the information.

4. Kodak objects to each and every Interrogatory to the extent it requires Kodak to make a legal conclusion and/or render an expert opinion.

5. Kodak objects to each and every Interrogatory as overly broad and unduly burdensome to the extent it is unlimited in temporal scope or otherwise not limited to a time frame that is relevant to this litigation and the patent in suit. Pursuant to 35 U.S.C. § 286, Philips is not entitled to recover for any infringement that allegedly occurred more than six years prior to the filing of the original Complaint on April 18, 2006. Kodak limits its interrogatory responses to the time period set forth in the specific responses and objections.

6. Kodak objects to each and every Interrogatory to the extent it seeks information already in Philips' possession or available in the public domain. Such information is as readily available to Philips as it is to Kodak.

7. Kodak objects to each and every Interrogatory to the extent it seeks information that is not in the possession, custody, or control of Kodak.

8. Kodak objects to each and every Interrogatory to the extent it seeks information that Kodak is not permitted to disclose pursuant to confidentiality obligations or agreements with third parties.

9. Kodak objects to each and every Interrogatory to the extent it seeks confidential, trade secret, or proprietary business, technical, marketing, or financial information.

10. Kodak objects to each and every Interrogatory to the extent it seeks information that is neither relevant to the issues in the lawsuit nor is reasonably calculated to lead to the discovery of admissible evidence.

11. Kodak objects to Philips' Definition No. 1 ("you" and "your") as overly broad and unduly burdensome to the extent it requests Kodak to produce documents maintained by

other companies or entities. Kodak will produce only those documents in its possession, custody, or control.

12. Kodak objects to Philips' Instruction No. 2 as overly broad in time. Except as set forth below, Kodak will not separately identify the document, communication or item for which it claims privilege. Rather, Kodak will identify its privileged documents in the form of a privilege log. However, Kodak will not disclose, produce or include on a privilege log any documents or things created or dated after the filing of Philips' original Complaint on April 18, 2006.

SPECIFIC OBJECTIONS AND RESPONSES

Kodak hereby supplements its responses to Interrogatories 1, 4 and 10 as follows:

INTERROGATORY NO. 1:

Identify each and every one of YOUR JPEG image encoding products and services, including an identification of all product names, labels, model numbers, and identifications used to identify each particular product; identify each person who has knowledge about the subject matter of this interrogatory; and identify each document and thing relating to the subject matter of this interrogatory.

SUPPLEMENTARY RESPONSE TO INTERROGATORY NO. 1:

Kodak objects to this Interrogatory as vague and ambiguous, including without limitation, the use of the phrase "JPEG image encoding products and services." Kodak further objects to this Interrogatory as being compound because it contains discrete subparts that require separate, distinct and multiple responses. Kodak objects to this Interrogatory as overly broad as to time and/or scope and unduly burdensome. Kodak will respond to this Interrogatory within the relevant Time Period as defined by Philips' First Set of Interrogatories. Kodak further objects to this Interrogatory to the extent it seeks to elicit information subject to and protected by the attorney-client privilege, the attorney work product doctrine and/or any other applicable

privileges, protections, or immunities. Kodak further objects to this Interrogatory to the extent it seeks information that is beyond Kodak's possession, custody or control.

Subject to the foregoing general and specific objections, Kodak responds to this Interrogatory as follows:

In accordance with the September 12, 2007 meet and confer call between DLA Piper and Finnegan, Henderson, Farabow, Garrett, & Dunner, and in response to Philips Interrogatory No. 14, Kodak hereby supplements its response to Philips Interrogatory No. 1. The following Kodak products and services implement or utilize the baseline sequential mode of the JPEG standard, ISO/IEC 10918-1, for encoding of images:

Product Category	**Product**
Consumer Digital Camera	C300
Consumer Digital Camera	C310
Consumer Digital Camera	C315
Consumer Digital Camera	C330
Consumer Digital Camera	C340
Consumer Digital Camera	C360
Consumer Digital Camera	C530
Consumer Digital Camera	C433
Consumer Digital Camera	C503
Consumer Digital Camera	C533
Consumer Digital Camera	C603
Consumer Digital Camera	C623
Consumer Digital Camera	C633
Consumer Digital Camera	C643
Consumer Digital Camera	C653
Consumer Digital Camera	C663
Consumer Digital Camera	C703
Consumer Digital Camera	C743
Consumer Digital Camera	C763
Consumer Digital Camera	C875
Consumer Digital Camera	CD33
Consumer Digital Camera	CD40

Product Category	Product
Consumer Digital Camera	CD43
Consumer Digital Camera	CD50
Consumer Digital Camera	CW330
Consumer Digital Camera	CX4200
Consumer Digital Camera	CX4210
Consumer Digital Camera	CX4230
Consumer Digital Camera	CX4300
Consumer Digital Camera	CX4310
Consumer Digital Camera	CX6200
Consumer Digital Camera	CX6230
Consumer Digital Camera	CX6330
Consumer Digital Camera	CX6445
Consumer Digital Camera	CX7220
Consumer Digital Camera	CX7300
Consumer Digital Camera	CX7310
Consumer Digital Camera	CX7330
Consumer Digital Camera	CX7430
Consumer Digital Camera	CX7525
Consumer Digital Camera	CX7530
Consumer Digital Camera	DC200
Consumer Digital Camera	DC200 Plus
Consumer Digital Camera	DC210
Consumer Digital Camera	DC210 Plus
Consumer Digital Camera	DC215
Consumer Digital Camera	DC215 Millennium
Consumer Digital Camera	DC220
Consumer Digital Camera	DC240
Consumer Digital Camera	DC240I
Consumer Digital Camera	DC260
Consumer Digital Camera	DC265
Consumer Digital Camera	DC280
Consumer Digital Camera	DC280J
Consumer Digital Camera	DC290
Consumer Digital Camera	DC3200
Consumer Digital Camera	DC3400
Consumer Digital Camera	DC3800
Consumer Digital Camera	DC4800

Product Category	Product
Consumer Digital Camera	DC5000
Consumer Digital Camera	DX3215
Consumer Digital Camera	DX3500
Consumer Digital Camera	DX3600
Consumer Digital Camera	DX3700
Consumer Digital Camera	DX3900
Consumer Digital Camera	DX4330
Consumer Digital Camera	DX4530
Consumer Digital Camera	DX4900
Consumer Digital Camera	DX6340
Consumer Digital Camera	DX6440
Consumer Digital Camera	DX6490
Consumer Digital Camera	DX7440
Consumer Digital Camera	DX7590
Consumer Digital Camera	DX7630
Consumer Digital Camera	EasyShare One
Consumer Digital Camera	EZ200
Consumer Digital Camera	LS420
Consumer Digital Camera	LS443
Consumer Digital Camera	LS633
Consumer Digital Camera	LS743
Consumer Digital Camera	LS753
Consumer Digital Camera	LS755
Consumer Digital Camera	P712
Consumer Digital Camera	P850
Consumer Digital Camera	P880
Consumer Digital Camera	PalmPix Palm III
Consumer Digital Camera	PalmPix Palm m100
Consumer Digital Camera	PalmPix Palm m500
Consumer Digital Camera	V705
Consumer Digital Camera	V530
Consumer Digital Camera	V550
Consumer Digital Camera	V570
Consumer Digital Camera	V603
Consumer Digital Camera	V610
Consumer Digital Camera	V803
Consumer Digital Camera	V1003

Product Category	Product
Consumer Digital Camera	Z612
Consumer Digital Camera	Z650
Consumer Digital Camera	Z700
Consumer Digital Camera	Z710
Consumer Digital Camera	Z712 IS
Consumer Digital Camera	Z730
Consumer Digital Camera	Z740
Consumer Digital Camera	Z7590
Consumer Digital Camera	Z760
Consumer Digital Camera	Z885
Consumer Digital Camera	Picture Easy Software
Consumer Digital Camera	Picture Postcard Software
Consumer Digital Camera	Picture Postcard Viewer Software
Consumer Digital Camera	Picture Transfer Application
Consumer Digital Camera	EasyShare Software – Macintosh
Consumer Digital Camera	EasyShare Software – Windows
Consumer Digital Camera	Kodak PalmPix Software
Consumer Digital Camera	Kodak Picture Page Software
Consumer Digital Camera	Kodak Picture Share Software
Picture CD	Kodak Picture Software
Picture CD	Kodak Pictures Now Software
Picture CD	Picture CD
Picture CD	Picture CD 7.0
Picture CD	Picture CD EasyShare Software
Picture CD	Picture Disk
Picture CD	Picture Disk Plus
Picture CD	Smart Picture Frame (Networked)
Picture CD	Smart Picture Frame (Non-networked)
Picture CD	Storybox System
Kodak Professional	220 VR CAM SYSTEM
Kodak Professional	260 VR CAM SYSTEM

Product Category	Product
Kodak Professional	265 VR CAM SYSTEM
Kodak Professional	7197940 DCS 520 W/O MEMORY CARD
Kodak Professional	Capture Studio
Kodak Professional	COMML DCS 220
Kodak Professional	COMML DCS 260
Kodak Professional	DCS 315 (KODAK)
Kodak Professional	DCS 330 (KODAK)
Kodak Professional	DCS 520 (KODAK)
Kodak Professional	DCS 520 BASE CAMERA
Kodak Professional	DCS 620 BASE CAMERA
Kodak Professional	DCS 620 KODAK
Kodak Professional	DCS 620X (KODAK)
Kodak Professional	DCS Acquire Module
Kodak Professional	DCS Camera manager
Kodak Professional	DCS File Format Module
Kodak Professional	DCS Photo desk
Kodak Professional	DCS PRO 14C
Kodak Professional	DCS PRO 14N
Kodak Professional	DCS PRO 14N 512MB DIGITAL CAMERA
Kodak Professional	DCS PRO 14NX
Kodak Professional	DCS PRO SLR/C
Kodak Professional	DCS PRO SLR/N
Kodak Professional	DCS Twain Module
Kodak Professional	DP2 Digital Print Production Software Version 6.1
Kodak Professional	HR SCANNING SW
Kodak Professional	KODAK PROF DCS 720X DIGITAL CAMERA
Kodak Professional	KODAK PROF DCS PROBACK 645C
Kodak Professional	KODAK PROF DCS PROBACK 645H
Kodak Professional	KODAK PROF DCS PROBACK 645M
Kodak Professional	KODAK PROF DCS PROBACK PLUS

Product Category	Product
Kodak Professional	KODAK PROF DCS760M MONOCHROME
Kodak Professional	KPLIS Lab Interface Software
Kodak Professional	KPRO DCS 760E DIGITAL CAMERA
Kodak Professional	PROFESSIONAL DCS PRO BACK
Kodak Professional	ProShots Basic Software
Kodak Professional	ProShots Groups Software
Kodak Professional	Proshots On Line Service Software
Kodak Professional	PROSHOTS Studio Software
Document Imaging	Kodak Capture Software
Document Imaging	ScanStation 100
Document Imaging	i30
Document Imaging	i40
Document Imaging	i50
Document Imaging	i55
Document Imaging	i60
Document Imaging	i65
Document Imaging	i80
Document Imaging	i150
Document Imaging	i160
Document Imaging	i250
Document Imaging	i260
Document Imaging	i280
Document Imaging	i610
Document Imaging	i620
Document Imaging	i640
Document Imaging	i660
Document Imaging	i800
Document Imaging	i810
Document Imaging	i820
Document Imaging	i830
Document Imaging	i840
Document Imaging	i1210
Document Imaging	i1220

Product Category	Product
Document Imaging	i1310
Document Imaging	i1320
Document Imaging	i1410
Document Imaging	i1420
Document Imaging	i1440
Document Imaging	i1840
Document Imaging	i1860
Document Imaging	i6015
Document Imaging	i6030
Document Imaging	i6060
Document Imaging	i6090
Document Imaging	i7300 Scanner Application Software
Document Imaging	s1220
Document Imaging	DS-3590C
Document Imaging	DS-3590DP
Document Imaging	DS-4500S
Document Imaging	DS-4500D
Document Imaging	DS-4500DP
Document Imaging	Microimage Software
Document Imaging	Powerfilm Application Software for i7300 Scanner
Document Imaging	Powerfilm for DSVs
Document Imaging	Imagelink IMS+ Node Module
Document Imaging	Image Server Software for i7300 Scanner, Intelligent Microimage Scanner, and Digital Workstation
Document Imaging	Imagelink Enhanced Printer Module
Health Imaging Molecular Imaging Systems	EDAS290 System
Health Imaging Molecular Imaging Systems	FIS265 System
Health Imaging Molecular Imaging Systems	ID Molecular Imaging Software
Health Imaging PACS	Archive Manager_v3.5.x
Health Imaging PACS	AutoRad-NT_DX_v4.0_v4.1
Health Imaging PACS	AutoRad-Mac_CX_v3.x

Product Category	Product
Health Imaging PACS	AutoRad-Mac_DX_v3.x
Health Imaging PACS	AutoRad-NT_CX_v4.0_v4.1
Health Imaging PACS	AutoRad-NT_PX_v4.0_v4.1
Health Imaging PACS	ClinicalAccess Display_v3.0_v4.x
Health Imaging PACS	ClinicalAccess Server_v3.0_v4.x
Health Imaging PACS	D1COM Router_v4.0_4.1
Health Imaging PACS	DICOM Router_v4.2.x_4.3.x
Health Imaging PACS	DICOM Router-Mac_v3.x
Health Imaging PACS	DICOM Server_v4.0_v4.1
Health Imaging PACS	DICOM Server-Mac_v3.x
Health Imaging PACS	DirectView ArchiveServer_v4.x
Health Imaging PACS	DirectView AX_CX_DX_v4.2.x_4.3.x
Health Imaging PACS	DirectView DICOM Enable Pkg_v4.x
Health Imaging PACS	DirectView DICOM Server v4.2.x 4.3.x
Health Imaging PACS	Directview TR Client v4.2
Health Imaging PACS	Directview TR Server v4.2
Health Imaging PACS	Directview Workflow Router v4.x
Health Imaging PACS	Directview Workgroup Server v4.x
Health Imaging PACS	DM1 Basic Viewer v.2.5 v.2.6 v.2.7 v.2.8
Health Imaging PACS	Film Digitizer PACS - Mitra
Health Imaging PACS	HIS-RIS Gateway-PACS Broker v. 1.5
Health Imaging PACS	MultiComServer Mac_v3.0_v3.1_v3.2
Health Imaging PACS	PACS System 5.1
Health Imaging PACS	PACS System 5.1.1
Health Imaging PACS	PACS System 5.2
Health Imaging PACS	StudyServer v4.0 v4.1
Health Imaging PACS	StudyServerMac v3.x
Health Imaging PACS	TeleMax DVI Macintosh_v2.0_v3.0

Product Category	Product
Health Imaging PACS	TeleMax Macintosh Client_v2.0_v 3.0
Health Imaging PACS	TeleMax Teleradiology Server Mac_v3.x
Health Imaging PACS	TeleMax Windows Client_v2.x_v3.x.
Health Imaging PACS	VIParchieve (LITMSa or EIM)
Health Imaging PACS	WebAccess Client v.2.0 2.1
Health Imaging PACS	WebAccess Server v.2.0 2.1
Heath Imaging PACS	Image Com Macintosh_v2.0_v.3.0 _3.1 _v3.2
Image Sensor	Kodak KAC 9702 Chip
Retail Solutions - Central Lab Components - I-LABS	Image Data Manager
Retail Solutions - Central Lab Components Kiosks	Kiosks
Retail Solutions - Central Lab Components Digital Mini Labs	DLS Software
Kodak Entertainment Imaging	Kodak Look Manager System V2.0 (KLMS)

Kodak's investigation into this Interrogatory is ongoing. Kodak will supplement and/or amend this response as circumstances and its ongoing investigation warrant.

INTERROGATORY NO. 4:

Separately for each JPEG image encoding product or service identified in YOUR response to Interrogatory No. 1, identify each person who is knowledgeable about the design, development, structure, configuration, functioning, or use of the product or service; and identify all documents and things that refer or relate to the design, development, structure, configuration, functioning, or use of the product or service.

RESPONSE TO INTERROGATORY NO. 4:

Kodak objects to this Interrogatory as vague and ambiguous, including without limitation, the use of the phrase "JPEG image encoding products or services" and the terms "configuration" and "functioning." Kodak further objects to this Interrogatory to the extent it seeks information that is beyond Kodak's possession, custody or control. Kodak further objects to this Interrogatory as being compound because it contains discrete subparts that require separate, distinct and multiple responses. Kodak objects to this Interrogatory as overly broad as to time and/or scope and unduly burdensome. Kodak will respond to this Interrogatory applying the relevant Time Period as defined by Philips' First Set of Interrogatories. Kodak further objects to this Interrogatory to the extent it seeks to elicit information subject to and protected by the attorney-client privilege, the attorney work product doctrine and/or any other applicable privileges, protections, or immunities. Subject to the foregoing general and specific objections, Kodak responds to this Interrogatory as follows:

In accordance with the September 12, 2007 meet and confer call between DLA Piper and Finnegan, Henderson, Farabow, Garrett, & Dunner, and in response to Philips Interrogatory No. 14, Kodak hereby supplements its response to Philips Interrogatory No. 4.

Persons having knowledge about Kodak products and services that implement or utilize the baseline sequential mode of the JPEG standard, ISO/IEC 10918-1, for the encoding of images include:

Majid Rabbani

Documents that relate to Kodak products or services that implement or utilize the baseline sequential mode of the JPEG standard, ISO/IEC 10918-1, for the encoding of images include the JPEG standards itself - International Standard ISO/IEC 10918-1 titled "Information technology –

Digital compression and coding of continuous-tone still images: Requirements and guidelines." In addition, other documents and things that refer or relate to the design, development, structure, configuration, functioning or use of the Kodak products and services identified in response to Interrogatory No. 1 include user guides, product brochures, specifications, product briefs, web pages, promotional materials, quick tip guides, accessory compatibility charts, and installation guides.

In addition, Kodak refers Philips to the individuals identified in Kodak's initial disclosures and Kodak's document production. Kodak's investigation into this Interrogatory is ongoing. Kodak will supplement and/or amend this response as circumstances and its ongoing investigation warrant.

INTERROGATORY NO. 10:

Separately for each JPEG image encoding product or service identified in YOUR response to Interrogatory No. 1, identify each and every manufacturer or developer of the product or service for each month from April 18, 2000, including an identification of all business names and addresses of the manufacturer or developer; state the total quantity of the product or service that was provided to YOU or YOUR customers from each manufacturer or developer; identify each person who has knowledge about the subject matter of this interrogatory; and identify each document and thing relating to the subject matter of this interrogatory.

SUPPLEMENTARY RESPONSE TO INTERROGATORY NO. 10:

Kodak objects to this Interrogatory as vague and ambiguous, including without limitation, its use of the phrase "JPEG encoding product or service." Kodak further objects to this Interrogatory as being compound because it contains discrete subparts that require separate distinct and multiple responses. Kodak further objects to the extent this Interrogatory seeks

confidential information from third parties that Kodak is under an obligation not to disclose. Kodak objects to this Interrogatory as overly broad and unduly burdensome. Kodak further objects to this Interrogatory to the extent it seeks to impose additional burdens or duties on Kodak that exceed the scope of reasonable and permissible discovery under the Federal Rules of Civil Procedure, the Local Civil Rules for the District of Delaware, or the Individual Rules of the Judge(s) hearing this matter. Kodak further objects to this Interrogatory to the extent it seeks information that is beyond Kodak's possession, custody or control. Subject to these objections and the general objections set forth above, Kodak responds as follows:

In accordance with the September 12, 2007 meet and confer call between DLA Piper and Finnegan, Henderson, Farabow, Garrett, & Dunner, and in response to Philips Interrogatory No. 14, Kodak hereby supplements its response to Philips Interrogatory No. 10 and provides the following information for Kodak products and services that implement or utilize the baseline sequential mode of the JPEG standard, ISO/IEC 10918-1, for encoding of images.

Product Category	Product	Manufacturer
Consumer Digital Camera	C300	Altek, Kunshan
Consumer Digital Camera	C310	Altek
Consumer Digital Camera	C315	Altek
Consumer Digital Camera	C330	Altek
Consumer Digital Camera	C340	Funai with PC
Consumer Digital Camera	C360	KEPS
Consumer Digital Camera	C530	Altek
Consumer Digital Camera	C433	Funai
Consumer Digital Camera	C503	Funai
Consumer Digital Camera	C533	KEPS
Consumer Digital Camera	C603	Altek
Consumer Digital Camera	C623	Funai
Consumer Digital Camera	C633	Altek
Consumer Digital Camera	C643	Altek
Consumer Digital Camera	C653	Funai

Product Category	Product	Manufacturer
Consumer Digital Camera	C663	DPC/KEPS
Consumer Digital Camera	C703	Altek
Consumer Digital Camera	C743	Aletk
Consumer Digital Camera	C763	Altek
Consumer Digital Camera	C875	KEPS
Consumer Digital Camera	CD33	Altek
Consumer Digital Camera	CD40	Altek
Consumer Digital Camera	CD43	Altek
Consumer Digital Camera	CD50	Altek
Consumer Digital Camera	CW330	Altek
Consumer Digital Camera	CX4200	Altek
Consumer Digital Camera	CX4210	Altek
Consumer Digital Camera	CX4230	Altek
Consumer Digital Camera	CX4300	Altek
Consumer Digital Camera	CX4310	Altek
Consumer Digital Camera	CX6200	Altek
Consumer Digital Camera	CX6230	Altek
Consumer Digital Camera	CX6330	KEPS
Consumer Digital Camera	CX6445	KEPS
Consumer Digital Camera	CX7220	Altek
Consumer Digital Camera	CX7300	Altek
Consumer Digital Camera	CX7310	Kunshan
Consumer Digital Camera	CX7330	Chinon, CM3, Funai
Consumer Digital Camera	CX7430	KEPS
Consumer Digital Camera	CX7525	KEPS
Consumer Digital Camera	CX7530	KEPS
Consumer Digital Camera	DC200	Chinon
Consumer Digital Camera	DC200 Plus	Chinon
Consumer Digital Camera	DC210	Chinon
Consumer Digital Camera	DC210 Plus	Chinon
Consumer Digital Camera	DC210a	Chinon
Consumer Digital Camera	DC215	Chinon
Consumer Digital Camera	DC215 Millennium	Chinon
Consumer Digital Camera	DC220	Chinon
Consumer Digital Camera	DC240	Chinon
Consumer Digital Camera	DC240I	Chinon
Consumer Digital Camera	DC260	Chinon

Product Category	Product	Manufacturer
Consumer Digital Camera	DC265	Chinon
Consumer Digital Camera	DC280	Chinon
Consumer Digital Camera	DC280J	Chinon
Consumer Digital Camera	DC290	Chinon
Consumer Digital Camera	DC3200	Sharp
Consumer Digital Camera	DC3400	Chinon
Consumer Digital Camera	DC3800	West, OEM
Consumer Digital Camera	DC4800	Chinon
Consumer Digital Camera	DC5000	Chinon
Consumer Digital Camera	DX3215	Sharp
Consumer Digital Camera	DX3500	Chinon, KEPS
Consumer Digital Camera	DX3600	Chinon, KEPS
Consumer Digital Camera	DX3700	Sharp
Consumer Digital Camera	DX3900	Chinon
Consumer Digital Camera	DX4330	KEPS
Consumer Digital Camera	DX4530	KEPS
Consumer Digital Camera	DX4900	Chinon, KEPS
Consumer Digital Camera	DX6340	KEPS
Consumer Digital Camera	DX6440	KEPS
Consumer Digital Camera	DX6490	Chinon, CM2, Sintai
Consumer Digital Camera	DX7440	KEPS
Consumer Digital Camera	DX7590	Chinon, CM2
Consumer Digital Camera	DX7630	KEPS
Consumer Digital Camera	EasyShare One	KEPS
Consumer Digital Camera	EZ200	Viewquest, OEM
Consumer Digital Camera	LS420	Chinon
Consumer Digital Camera	LS443	Chinon, Dahai
Consumer Digital Camera	LS633	KEPS
Consumer Digital Camera	LS743	Chinon, CM2, Sintai
Consumer Digital Camera	LS753	CM2, Sintai
Consumer Digital Camera	LS755	Sanyo
Consumer Digital Camera	P712	Sanyo
Consumer Digital Camera	P850	Sanyo Japan/China
Consumer Digital Camera	P880	Sanyo Japan/Korea
Consumer Digital Camera	PalmPix Palm III	Viewquest
Consumer Digital Camera	PalmPix Palm m100	Viewquest
Consumer Digital Camera	PalmPix Palm m500	Viewquest

Product Category	Product	Manufacturer
Consumer Digital Camera	V705	KEPS
Consumer Digital Camera	V530	DPC, CM2, Sintai
Consumer Digital Camera	V550	DPC, CM2, Sintai
Consumer Digital Camera	V570	KEPS
Consumer Digital Camera	V603	CM2, Sintai
Consumer Digital Camera	V610	KEPS
Consumer Digital Camera	V803	Sintai
Consumer Digital Camera	V1003	Sintai
Consumer Digital Camera	Z612	CM2/Sintai
Consumer Digital Camera	Z650	KEPS
Consumer Digital Camera	Z700	KEPS
Consumer Digital Camera	Z710	KEPS
Consumer Digital Camera	Z712 IS	Flextronics
Consumer Digital Camera	Z730	KEPS Shanghai
Consumer Digital Camera	Z740	KEPS Shanghai
Consumer Digital Camera	Z7590	CM2, Sintai
Consumer Digital Camera	Z760	KEPS Shanghai
Consumer Digital Camera	Z885	Flextronics
Kodak Professional	DCS 315 (KODAK)	Kodak
Kodak Professional	DCS 330 (KODAK)	Kodak
Kodak Professional	DCS 520 (KODAK)	Kodak
Kodak Professional	DCS 620 KODAK	Kodak
Kodak Professional	DCS 620X (KODAK)	Kodak
Kodak Professional	DCS PRO 14N	Kodak
Kodak Professional	DCS PRO 14NX	Kodak
Kodak Professional	DCS PRO SLR/C	Kodak/Sigma
Kodak Professional	DCS PRO SLR/N	Kodak
Kodak Professional	KODAK PROF DCS 720X DIGITAL CAMERA	Kodak
Kodak Professional	KODAK PROF DCS PROBACK 645C	Kodak
Kodak Professional	KODAK PROF DCS PROBACK 645H	Kodak
Kodak Professional	KODAK PROF DCS PROBACK 645M	Kodak
Kodak Professional	KODAK PROF DCS PROBACK PLUS	Kodak
Kodak Professional	PROFESSIONAL DCS PRO BACK	Kodak

Product Category	Product	Manufacturer
Document Imaging	Kodak Capture Software	Iris
Document Imaging	ScanStation 100	Kodak Shanghai
Document Imaging	i30	Avision
Document Imaging	i40	Avision
Document Imaging	i50	Avision
Document Imaging	i55	Avision
Document Imaging	i60	Avision
Document Imaging	i65	Avision
Document Imaging	i80	Avision
Document Imaging	i150	Kodak Shanghai
Document Imaging	i160	Kodak Shanghai
Document Imaging	i250	Kodak Rochester
Document Imaging	i260	Kodak Rochester
Document Imaging	i280	Kodak Rochester
Document Imaging	i610	Kodak Shanghai
Document Imaging	i620	Kodak Shanghai
Document Imaging	i640	Kodak Shanghai
Document Imaging	i660	Kodak Shanghai
Document Imaging	i800	Kodak Rochester
Document Imaging	i810	Kodak Rochester
Document Imaging	i820	Kodak Rochester
Document Imaging	i830	Kodak Rochester
Document Imaging	i840	Kodak Rochester
Document Imaging	i1210	Kodak Shanghai
Document Imaging	i1220	Kodak Shanghai
Document Imaging	i1310	Kodak Shanghai
Document Imaging	i1320	Kodak Shanghai
Document Imaging	i1410	Kodak Shanghai
Document Imaging	i1420	Kodak Shanghai
Document Imaging	i1440	Kodak Shanghai
Document Imaging	i1840	Kodak Shanghai
Document Imaging	i1860	Kodak Shanghai
Document Imaging	i6015	Digital Check Corporation
Document Imaging	i6030	Digital Check Corporation
Document Imaging	i6060	Digital Check Corporation
Document Imaging	i6090	Digital Check Corporation

Product Category	Product	Manufacturer
Document Imaging	i7300 Scanner Application Software	Kodak Rochester
Document Imaging	s1220	Kodak Rochester
Document Imaging	DS-3590C	Kodak Rochester
Document Imaging	DS-3590DP	Kodak Rochester
Document Imaging	DS-4500S	Kodak Rochester
Document Imaging	DS-4500D	Kodak Rochester
Document Imaging	DS-4500DP	Kodak Rochester
Document Imaging	Microimage Software	Kodak Rochester
Document Imaging	Powerfilm Application Software for i7300 Scanner	InfoCap
Document Imaging	Powerfilm for DSVs	InfoCap
Document Imaging	Imagelink IMS+ Node Module	Kodak Rochester
Document Imaging	Image Server Software for i7300 Scanner, Intelligent Microimage Scanner, and Digital Workstation	Kodak Rochester
Document Imaging	Imagelink Enhanced Printer Module	Kodak Rochester

Kodak refers Philips to the individuals identified in Kodak's initial disclosures and Kodak's document production. Kodak's investigation into this Interrogatory is ongoing. Kodak will supplement and/or amend this response as circumstances and its ongoing investigation warrant.

Date: October 8, 2007

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EXHIBIT 2



INTERNATIONAL TELECOMMUNICATION UNION

CCITT

THE INTERNATIONAL
TELEGRAPH AND TELEPHONE
CONSULTATIVE COMMITTEE

T.81

(09/92)

TERMINAL EQUIPMENT AND PROTOCOLS FOR TELEMATIC SERVICES

INFORMATION TECHNOLOGY – DIGITAL COMPRESSION AND CODING OF CONTINUOUS-TONE STILL IMAGES – REQUIREMENTS AND GUIDELINES



Recommendation T.81

Annex F

Sequential DCT-based mode of operation

(This annex forms an integral part of this Recommendation | International Standard)

This annex provides a **functional specification** of the following coding processes for the sequential DCT-based mode of operation:

1) baseline sequential;
2) extended sequential, Huffman coding, 8-bit sample precision;
3) extended sequential, arithmetic coding, 8-bit sample precision;
4) extended sequential, Huffman coding, 12-bit sample precision;
5) extended sequential, arithmetic coding, 12-bit sample precision.

For each of these, the encoding process is specified in F.1, and the decoding process is specified in F.2. The functional specification is presented by means of specific flow charts for the various procedures which comprise these coding processes.

NOTE – There is **no requirement** in this Specification that any encoder or decoder which embodies one of the above-named processes shall implement the procedures in precisely the manner specified by the flow charts in this annex. It is necessary only that an encoder or decoder implement the **function** specified in this annex. The sole criterion for an encoder or decoder to be considered in compliance with this Specification is that it satisfy the requirements given in clause 6 (for encoders) or clause 7 (for decoders), as determined by the compliance tests specified in Part 2.

F.1 Sequential DCT-based encoding processes

F.1.1 Sequential DCT-based control procedures and coding models

F.1.1.1 Control procedures for sequential DCT-based encoders

The control procedures for encoding an image and its constituent parts – the frame, scan, restart interval and MCU – are given in Figures E.1 to E.5. The procedure for encoding a MCU (see Figure E.5) repetitively calls the procedure for encoding a data unit. For DCT-based encoders the data unit is an 8×8 block of samples.

F.1.1.2 Procedure for encoding an 8×8 block data unit

For the sequential DCT-based processes encoding an 8×8 block data unit consists of the following procedures:

a) level shift, calculate forward 8×8 DCT and quantize the resulting coefficients using table destination specified in frame header;

b) encode DC coefficient for 8×8 block using DC table destination specified in scan header;

c) encode AC coefficients for 8×8 block using AC table destination specified in scan header.

F.1.1.3 Level shift and forward DCT (FDCT)

The mathematical definition of the FDCT is given in A.3.3.

Prior to computing the FDCT the input data are level shifted to a signed two's complement representation as described in A.3.1. For 8-bit input precision the level shift is achieved by subtracting 128. For 12-bit input precision the level shift is achieved by subtracting 2048.

F.1.1.4 Quantization of the FDCT

The uniform quantization procedure described in Annex A is used to quantize the DCT coefficients. One of four quantization tables may be used by the encoder. No default quantization tables are specified in this Specification. However, some typical quantization tables are given in Annex K.

The quantized DCT coefficient values are signed, two's complement integers with 11-bit precision for 8-bit input precision and 15-bit precision for 12-bit input precision.

F.1.1.5 Encoding models for the sequential DCT procedures

The two dimensional array of quantized DCT coefficients is rearranged in a zig-zag sequence order defined in A.3.6. The zig-zag order coefficients are denoted ZZ (0) through ZZ(63) with:

$$ZZ(0) = Sq_{00}, ZZ(1) = Sq_{01}, ZZ(2) = Sq_{10}, \bullet, \bullet, \bullet, ZZ(63) = Sq_{77}$$

Sq_{vu} are defined in Figure A.6.

Two coding procedures are used, one for the DC coefficient ZZ(0) and the other for the AC coefficients ZZ(1)..ZZ(63). The coefficients are encoded in the order in which they occur in zig-zag sequence order, starting with the DC coefficient. The coefficients are represented as two's complement integers.

F.1.1.5.1 Encoding model for DC coefficients

The DC coefficients are coded differentially, using a one-dimensional predictor, PRED, which is the quantized DC value from the most recently coded 8×8 block from the same component. The difference, DIFF, is obtained from

$$DIFF = ZZ(0) - PRED$$

At the beginning of the scan and at the beginning of each restart interval, the prediction for the DC coefficient prediction is initialized to 0. (Recall that the input data have been level shifted to two's complement representation.)

F.1.1.5.2 Encoding model for AC coefficients

Since many coefficients are zero, runs of zeros are identified and coded efficiently. In addition, if the remaining coefficients in the zig-zag sequence order are all zero, this is coded explicitly as an end-of-block (EOB).

F.1.2 Baseline Huffman encoding procedures

The baseline encoding procedure is for 8-bit sample precision. The encoder may employ up to two DC and two AC Huffman tables within one scan.

F.1.2.1 Huffman encoding of DC coefficients

F.1.2.1.1 Structure of DC code table

The DC code table consists of a set of Huffman codes (maximum length 16 bits) and appended additional bits (in most cases) which can code any possible value of DIFF, the difference between the current DC coefficient and the prediction. The Huffman codes for the difference categories are generated in such a way that no code consists entirely of 1-bits (X'FF' prefix marker code avoided).

The two's complement difference magnitudes are grouped into 12 categories, SSSS, and a Huffman code is created for each of the 12 difference magnitude categories (see Table F.1).

For each category, except SSSS = 0, an additional bits field is appended to the code word to uniquely identify which difference in that category actually occurred. The number of extra bits is given by SSSS; the extra bits are appended to the LSB of the preceding Huffman code, most significant bit first. When DIFF is positive, the SSSS low order bits of DIFF are appended. When DIFF is negative, the SSSS low order bits of (DIFF – 1) are appended. Note that the most significant bit of the appended bit sequence is 0 for negative differences and 1 for positive differences.

F.1.2.1.2 Defining Huffman tables for the DC coefficients

The syntax for specifying the Huffman tables is given in Annex B. The procedure for creating a code table from this information is described in Annex C. No more than two Huffman tables may be defined for coding of DC coefficients. Two examples of Huffman tables for coding of DC coefficients are provided in Annex K.

Table F.1 – Difference magnitude categories for DC coding

SSSS	DIFF values
0	0
1	–1,1
2	–3,–2,2,3
3	–7..–4,4..7
4	–15..–8,8..15
5	–31..–16,16..31
6	–63..–32,32..63
7	–127..–64,64..127
8	–255..–128,128..255
9	–511..–256,256..511
10	–1 023..–512,512..1 023
11	–2 047..–1 024,1 024..2 047

F.1.2.1.3 Huffman encoding procedures for DC coefficients

The encoding procedure is defined in terms of a set of extended tables, XHUFCO and XHUFSI, which contain the complete set of Huffman codes and sizes for all possible difference values. For full 12-bit precision the tables are relatively large. For the baseline system, however, the precision of the differences may be small enough to make this description practical.

XHUFCO and XHUFSI are generated from the encoder tables EHUFCO and EHUFSI (see Annex C) by appending to the Huffman codes for each difference category the additional bits that completely define the difference. By definition, XHUFCO and XHUFSI have entries for each possible difference value. XHUFCO contains the concatenated bit pattern of the Huffman code and the additional bits field; XHUFSI contains the total length in bits of this concatenated bit pattern. Both are indexed by DIFF, the difference between the DC coefficient and the prediction.

The Huffman encoding procedure for the DC difference, DIFF, is:

SIZE = XHUFSI(DIFF)

CODE = XHUFCO(DIFF)

code SIZE bits of CODE

where DC is the quantized DC coefficient value and PRED is the predicted quantized DC value. The Huffman code (CODE) (including any additional bits) is obtained from XHUFCO and SIZE (length of the code including additional bits) is obtained from XHUFSI, using DIFF as the index to the two tables.

F.1.2.2 Huffman encoding of AC coefficients

F.1.2.2.1 Structure of AC code table

Each non-zero AC coefficient in ZZ is described by a composite 8-bit value, RS, of the form

RS = binary ’RRRRSSSS’

The 4 least significant bits, 'SSSS', define a category for the amplitude of the next non-zero coefficient in ZZ, and the 4 most significant bits, 'RRRR', give the position of the coefficient in ZZ relative to the previous non-zero coefficient (i.e. the run-length of zero coefficients between non-zero coefficients). Since the run length of zero coefficients may exceed 15, the value 'RRRRSSSS' = X'F0' is defined to represent a run length of 15 zero coefficients followed by a coefficient of zero amplitude. (This can be interpreted as a run length of 16 zero coefficients.) In addition, a special value 'RRRRSSSS' = '00000000' is used to code the end-of-block (EOB), when all remaining coefficients in the block are zero.

The general structure of the code table is illustrated in Figure F.1. The entries marked "N/A" are undefined for the baseline procedure.

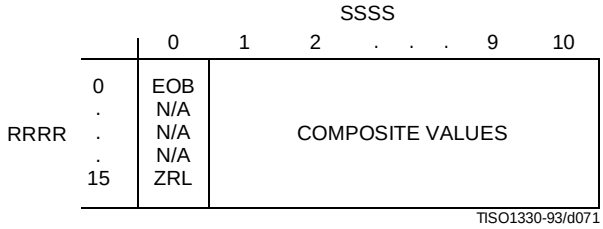


Figure F.1 – Two-dimensional value array for Huffman coding

The magnitude ranges assigned to each value of SSSS are defined in Table F.2.

Table F.2 – Categories assigned to coefficient values

SSSS	AC coefficients
1	–1,1
2	–3,–2,2,3
3	–7..–4,4..7
4	–15..–8,8..15
5	–31..–16,16..31
6	–63..–32,32..63
7	–127..–64,64..127
8	–255..–128,128..255
9	–511..–256,256..511
10	–1 023..–512,512..1 023

The composite value, RRRRSSSS, is Huffman coded and each Huffman code is followed by additional bits which specify the sign and exact amplitude of the coefficient.

The AC code table consists of one Huffman code (maximum length 16 bits, not including additional bits) for each possible composite value. The Huffman codes for the 8-bit composite values are generated in such a way that no code consists entirely of 1-bits.

The format for the additional bits is the same as in the coding of the DC coefficients. The value of SSSS gives the number of additional bits required to specify the sign and precise amplitude of the coefficient. The additional bits are either the low-order SSSS bits of ZZ(K) when ZZ(K) is positive or the low-order SSSS bits of ZZ(K) – 1 when ZZ(K) is negative. ZZ(K) is the *K*th coefficient in the zig-zag sequence of coefficients being coded.

F.1.2.2.2 Defining Huffman tables for the AC coefficients

The syntax for specifying the Huffman tables is given in Annex B. The procedure for creating a code table from this information is described in Annex C.

In the baseline system no more than two Huffman tables may be defined for coding of AC coefficients. Two examples of Huffman tables for coding of AC coefficients are provided in Annex K.

F.1.2.2.3 Huffman encoding procedures for AC coefficients

As defined in Annex C, the Huffman code table is assumed to be available as a pair of tables, EHUFCO (containing the code bits) and EHUFSI (containing the length of each code in bits), both indexed by the composite value defined above.

The procedure for encoding the AC coefficients in a block is shown in Figures F.2 and F.3. In Figure F.2, K is the index to the zig-zag scan position and R is the run length of zero coefficients.

The procedure “Append EHUFSI(X’F0’) bits of EHUFCO(X’F0’)” codes a run of 16 zero coefficients (ZRL code of Figure F.1). The procedure “Code EHUFSI(0) bits of EHUFCO(0)” codes the end-of-block (EOB code). If the last coefficient (K = 63) is not zero, the EOB code is bypassed.

CSIZE is a procedure which maps an AC coefficient to the SSSS value as defined in Table F.2.

F.1.2.3 Byte stuffing

In order to provide code space for marker codes which can be located in the compressed image data without decoding, byte stuffing is used.

Whenever, in the course of normal encoding, the byte value X’FF’ is created in the code string, a X’00’ byte is stuffed into the code string.

If a X’00’ byte is detected after a X’FF’ byte, the decoder must discard it. If the byte is not zero, a marker has been detected, and shall be interpreted to the extent needed to complete the decoding of the scan.

Byte alignment of markers is achieved by padding incomplete bytes with 1-bits. If padding with 1-bits creates a X’FF’ value, a zero byte is stuffed before adding the marker.

F.1.3 Extended sequential DCT-based Huffman encoding process for 8-bit sample precision

This process is identical to the Baseline encoding process described in F.1.2, with the exception that the number of sets of Huffman table destinations which may be used within the same scan is increased to four. Four DC and four AC Huffman table destinations is the maximum allowed by this Specification.

F.1.4 Extended sequential DCT-based arithmetic encoding process for 8-bit sample precision

This subclause describes the use of arithmetic coding procedures in the sequential DCT-based encoding process.

NOTE – The arithmetic coding procedures in this Specification are defined for the maximum precision to encourage interchangeability.

The arithmetic coding extensions have the same DCT model as the Baseline DCT encoder. Therefore, Annex F.1.1 also applies to arithmetic coding. As with the Huffman coding technique, the binary arithmetic coding technique is lossless. It is possible to transcode between the two systems without either FDCT or IDCT computations, and without modification of the reconstructed image.

The basic principles of adaptive binary arithmetic coding are described in Annex D. Up to four DC and four AC conditioning table destinations and associated statistics areas may be used within one scan.

The arithmetic encoding procedures for encoding binary decisions, initializing the statistics area, initializing the encoder, terminating the code string, and adding restart markers are listed in Table D.1 of Annex D.

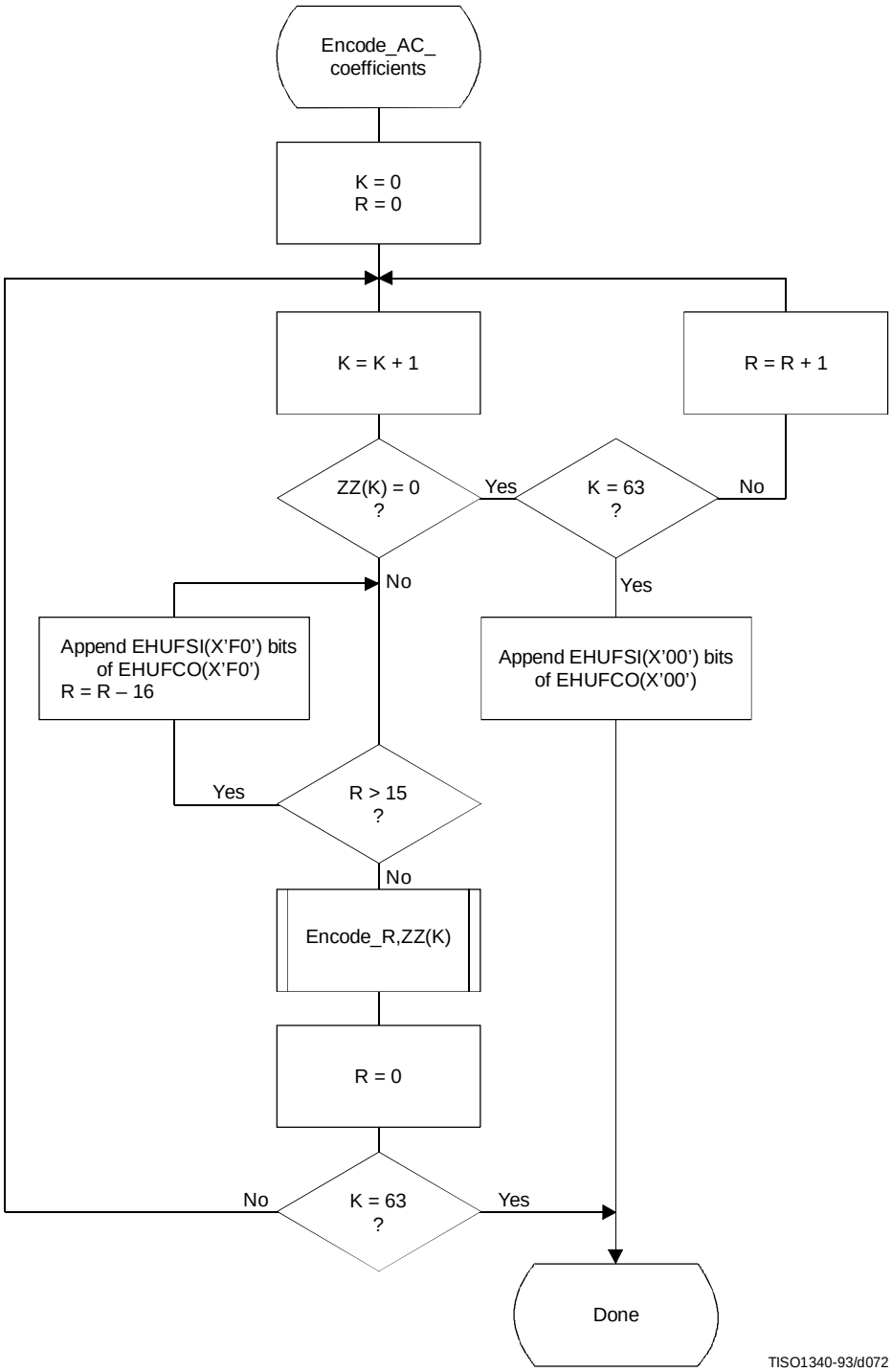


Figure F.2 – Procedure for sequential encoding of AC coefficients with Huffman coding

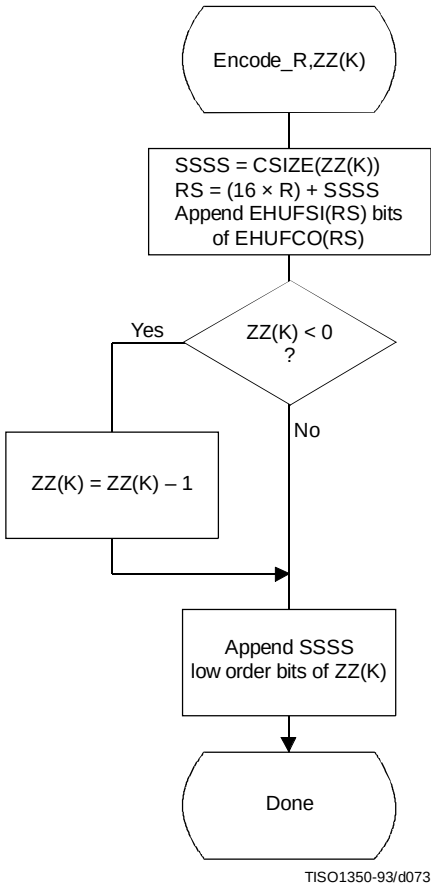


Figure F.3 – Sequential encoding of a non-zero AC coefficient

Some of the procedures in Table D.1 are used in the higher level control structure for scans and restart intervals described in Annex E. At the beginning of scans and restart intervals, the probability estimates used in the arithmetic coder are reset to the standard initial value as part of the Initenc procedure which restarts the arithmetic coder. At the end of scans and restart intervals, the Flush procedure is invoked to empty the code register before the next marker is appended.

F.1.4.1 Arithmetic encoding of DC coefficients

The basic structure of the decision sequence for encoding a DC difference value, DIFF, is shown in Figure F.4.

The context-index S0 and other context-indices used in the DC coding procedures are defined in Table F.4 (see F.1.4.4.1.3). A 0-decision is coded if the difference value is zero and a 1-decision is coded if the difference is not zero. If the difference is not zero, the sign and magnitude are coded using the procedure Encode_V(S0), which is described in F.1.4.3.1.

F.1.4.2 Arithmetic encoding of AC coefficients

The AC coefficients are coded in the order in which they occur in the zig-zag sequence ZZ(1,...,63). An end-of-block (EOB) binary decision is coded before coding the first AC coefficient in ZZ, and after each non-zero coefficient. If the EOB occurs, all remaining coefficients in ZZ are zero. Figure F.5 illustrates the decision sequence. The equivalent procedure for the Huffman coder is found in Figure F.2.

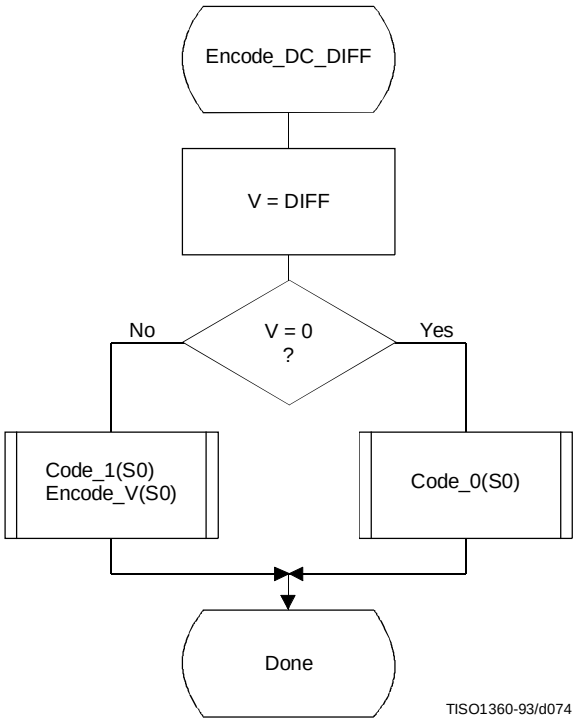


Figure F.4 – Coding model for arithmetic coding of DC difference

The context-indices SE and S0 used in the AC coding procedures are defined in Table F.5 (see F.1.4.4.2). In Figure F.5, K is the index to the zig-zag sequence position. For the sequential scan, Kmin is 1 and Se is 63. The V = 0 decision is part of a loop which codes runs of zero coefficients. Whenever the coefficient is non-zero, "Encode_V(S0)" codes the sign and magnitude of the coefficient. Each time a non-zero coefficient is coded, it is followed by an EOB decision. If the EOB occurs, a 1-decision is coded to indicate that the coding of the block is complete. If the coefficient for K = Se is not zero, the EOB decision is skipped.

F.1.4.3 Encoding the binary decision sequence for non-zero DC differences and AC coefficients

Both the DC difference and the AC coefficients are represented as signed two's complement integer values. The decomposition of these signed integer values into a binary decision tree is done in the same way for both the DC and AC coding models.

Although the binary decision trees for this section of the DC and AC coding models are the same, the statistical models for assigning statistics bins to the binary decisions in the tree are quite different.

F.1.4.3.1 Structure of the encoding decision sequence

The encoding sequence can be separated into three procedures, a procedure which encodes the sign, a second procedure which identifies the magnitude category, and a third procedure which identifies precisely which magnitude occurred within the category identified in the second procedure.

At the point where the binary decision sequence in Encode_V(S0) starts, the coefficient or difference has already been determined to be non-zero. That determination was made in the procedures in Figures F.4 and F.5.

Denoting either DC differences (DIFF) or AC coefficients as V, the non-zero signed integer value of V is encoded by the sequence shown in Figure F.6. This sequence first codes the sign of V. It then (after converting V to a magnitude and decrementing it by 1 to give Sz) codes the magnitude category of Sz (code_log2_Sz), and then codes the low order magnitude bits (code_Sz_bits) to identify the exact magnitude value.

There are two significant differences between this sequence and the similar set of operations described in F.1.2 for Huffman coding. First, the sign is encoded before the magnitude category is identified, and second, the magnitude is decremented by 1 before the magnitude category is identified.

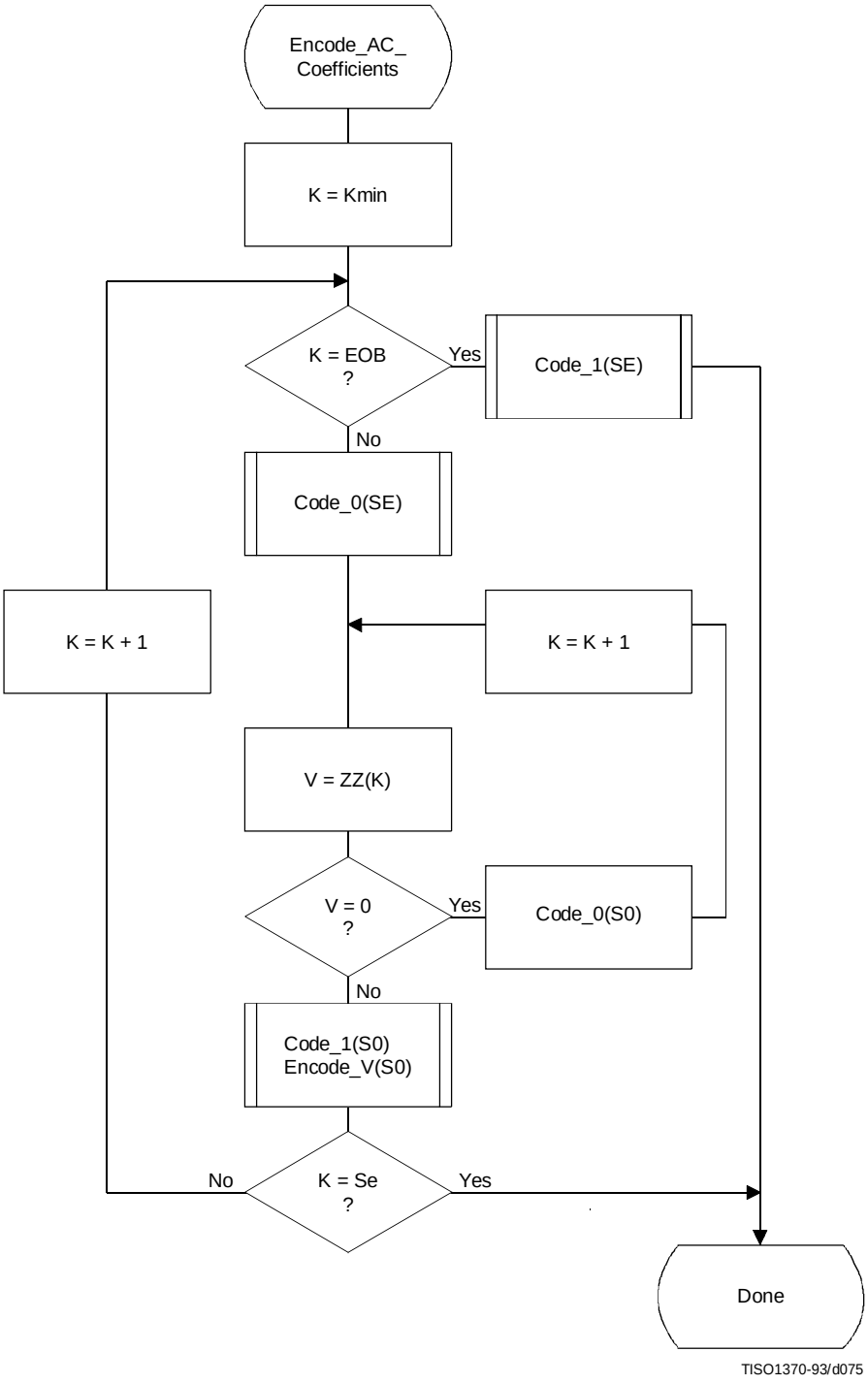


Figure F.5 – AC coding model for arithmetic coding

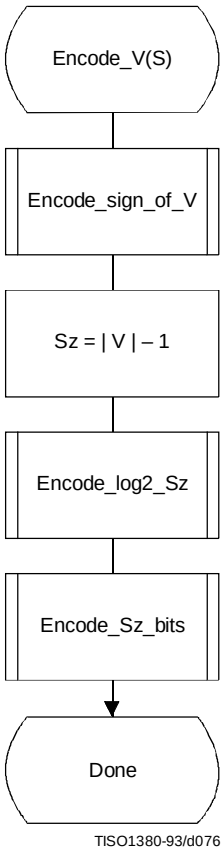


Figure F.6 – Sequence of procedures in encoding non-zero values of V

F.1.4.3.1.1 Encoding the sign

The sign is encoded by coding a 0-decision when the sign is positive and a 1-decision when the sign is negative (see Figure F.7).

The context-indices SS, SN and SP are defined for DC coding in Table F.4 and for AC coding in Table F.5. After the sign is coded, the context-index S is set to either SN or SP, establishing an initial value for Encode_log2_Sz.

F.1.4.3.1.2 Encoding the magnitude category

The magnitude category is determined by a sequence of binary decisions which compares Sz against an exponentially increasing bound (which is a power of 2) in order to determine the position of the leading 1-bit. This establishes the magnitude category in much the same way that the Huffman encoder generates a code for the value associated with the difference category. The flow chart for this procedure is shown in Figure F.8.

The starting value of the context-index S is determined in Encode_sign_of_V, and the context-index values X1 and X2 are defined for DC coding in Table F.4 and for AC coding in Table F.5. In Figure F.8, M is the exclusive upper bound for the magnitude and the abbreviations “SLL” and “SRL” refer to the shift-left-logical and shift-right-logical operations – in this case by one bit position. The SRL operation at the completion of the procedure aligns M with the most significant bit of Sz (see Table F.3).

The highest precision allowed for the DCT is 15 bits. Therefore, the highest precision required for the coding decision tree is 16 bits for the DC coefficient difference and 15 bits for the AC coefficients, including the sign bit.

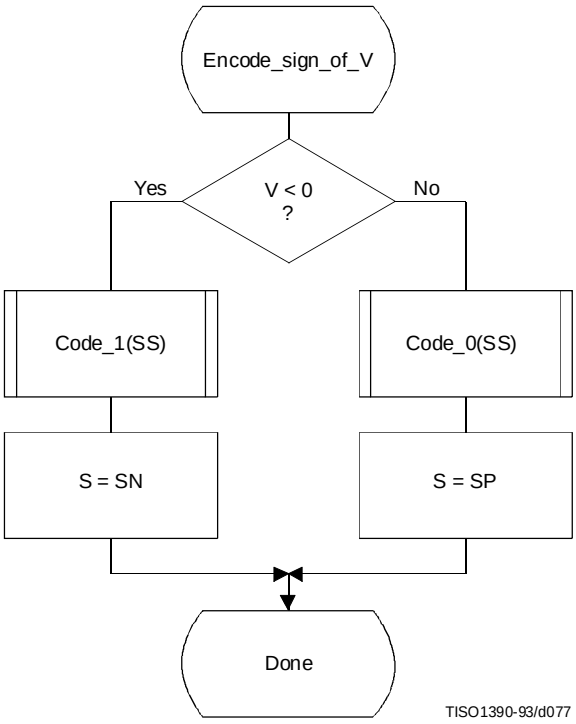


Figure F.7 – Encoding the sign of V

Table F.3 – Categories for each maximum bound

Exclusive upper bound (M)	Sz range	Number of low order magnitude bits
1	0	0
2	1	0
4	2,3	1
8	4,...,7	2
16	8,...,15	3
32	16,...,31	4
64	32,...,63	5
128	64,...,127	6
256	128,...,255	7
512	256,...,511	8
1 024	512,...,1 023	9
2 048	1 024,...,2 047	10
4 096	2 048,...,4 095	11
8 192	4 096,...,8 191	12
16 384	8 192,...,16 383	13
32 768	16 384,...,32 767	14

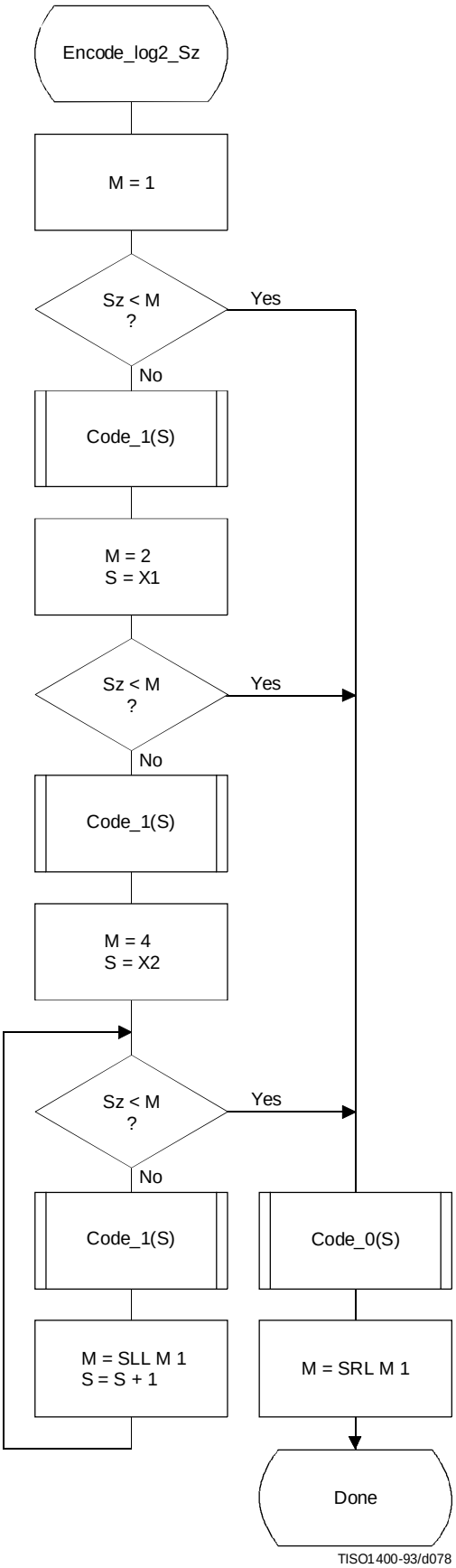


Figure F.8 – Decision sequence to establish the magnitude category

F.1.4.3.1.3 Encoding the exact value of the magnitude

After the magnitude category is encoded, the low order magnitude bits are encoded. These bits are encoded in order of decreasing bit significance. The procedure is shown in Figure F.9. The abbreviation "SRL" indicates the shift-right-logical operation, and M is the exclusive bound established in Figure F.8. Note that M has only one bit set – shifting M right converts it into a bit mask for the logical "AND" operation.

The starting value of the context-index S is determined in Encode_log2_Sz. The increment of S by 14 at the beginning of this procedure sets the context-index to the value required in Tables F.4 and F.5.

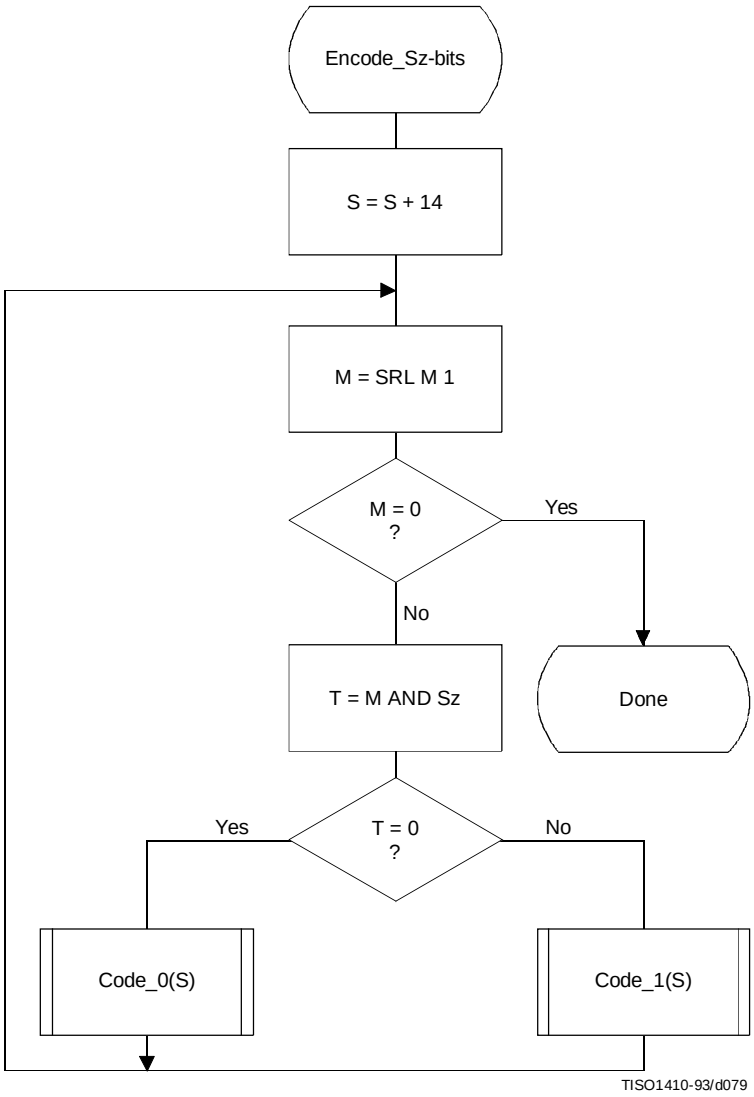


Figure F.9 – Decision sequence to code the magnitude bit pattern

F.1.4.4 Statistical models

An adaptive binary arithmetic coder requires a statistical model. The statistical model defines the contexts which are used to select the conditional probability estimates used in the encoding and decoding procedures.

Each decision in the binary decision trees is associated with one or more contexts. These contexts identify the sense of the MPS and the index in Table D.3 of the conditional probability estimate Qe which is used to encode and decode the binary decision.

The arithmetic coder is adaptive, which means that the probability estimates for each context are developed and maintained by the arithmetic coding system on the basis of prior coding decisions for that context.

F.1.4.4.1 Statistical model for coding DC prediction differences

The statistical model for coding the DC difference conditions some of the probability estimates for the binary decisions on previous DC coding decisions.

F.1.4.4.1.1 Statistical conditioning on sign

In coding the DC coefficients, four separate statistics bins (probability estimates) are used in coding the zero/not-zero (V = 0) decision, the sign decision and the first magnitude category decision. Two of these bins are used to code the V = 0 decision and the sign decision. The other two bins are used in coding the first magnitude decision, Sz < 1; one of these bins is used when the sign is positive, and the other is used when the sign is negative. Thus, the first magnitude decision probability estimate is conditioned on the sign of V.

F.1.4.4.1.2 Statistical conditioning on DC difference in previous block

The probability estimates for these first three decisions are also conditioned on Da, the difference value coded for the previous DCT block of the same component. The differences are classified into five groups: zero, small positive, small negative, large positive and large negative. The relationship between the default classification and the quantization scale is shown in Figure F.10.

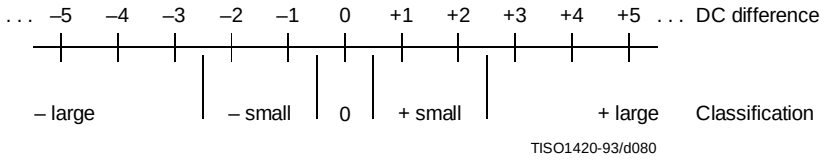


Figure F.10 – Conditioning classification of difference values

The bounds for the “small” difference category determine the classification. Defining L and U as integers in the range 0 to 15 inclusive, the lower bound (exclusive) for difference magnitudes classified as “small” is zero for L = 0, and is 2^{L-1} for L > 0.

The upper bound (inclusive) for difference magnitudes classified as “small” is 2^{U}.

L shall be less than or equal to U.

These bounds for the conditioning category provide a segmentation which is identical to that listed in Table F.3.

F.1.4.4.1.3 Assignment of statistical bins to the DC binary decision tree

As shown in Table F.4, each statistics area for DC coding consists of a set of 49 statistics bins. In the following explanation, it is assumed that the bins are contiguous. The first 20 bins consist of five sets of four bins selected by a context-index S0. The value of S0 is given by DC_Context(Da), which provides a value of 0, 4, 8, 12 or 16, depending on the difference classification of Da (see F.1.4.4.1.2). The remaining 29 bins, X1,...,X15,M2,...,M15, are used to code magnitude category decisions and magnitude bits.

Table F.4 – Statistical model for DC coefficient coding

Context-index	Value	Coding decision
S0	DC_Context(Da)	V = 0
SS	S0 + 1	Sign of V
SP	S0 + 2	Sz < 1 if V > 0
SN	S0 + 3	Sz < 1 if V < 0
X1	20	Sz < 2
X2	X1 + 1	Sz < 4
X3	X1 + 2	Sz < 8
.	.	.
.	.	.
X15	X1 + 14	$Sz < 2^{15}$
M2	X2 + 14	Magnitude bits if Sz < 4
M3	X3 + 14	Magnitude bits if Sz < 8
.	.	.
.	.	.
M15	X15 + 14	Magnitude bits if $Sz < 2^{15}$

F.1.4.4.1.4 Default conditioning for DC statistical model

The bounds, L and U, for determining the conditioning category have the default values L = 0 and U = 1. Other bounds may be set using the DAC (Define Arithmetic coding Conditioning) marker segment, as described in Annex B.

F.1.4.4.1.5 Initial conditions for DC statistical model

At the start of a scan and at the beginning of each restart interval, the difference for the previous DC value is defined to be zero in determining the conditioning state.

F.1.4.4.2 Statistical model for coding the AC coefficients

As shown in Table F.5, each statistics area for AC coding consists of a contiguous set of 245 statistics bins. Three bins are used for each value of the zig-zag index K, and two sets of 28 additional bins X2,...,X15,M2,...,M15 are used for coding the magnitude category and magnitude bits.

The value of SE (and also S0, SP and SN) is determined by the zig-zag index K. Since K is in the range 1 to 63, the lowest value for SE is 0 and the largest value for SP is 188. SS is not assigned a value in AC coefficient coding, as the signs of the coefficients are coded with a fixed probability value of approximately 0.5 (Qe = X'5A1D', MPS = 0).

The value of X2 is given by AC_Context(K). This gives X2 = 189 when K ≤ Kx and X2 = 217 when K > Kx, where Kx is defined using the DAC marker segment (see B.2.4.3).

Note that a X1 statistics bin is not used in this sequence. Instead, the 63 × 1 array of statistics bins for the magnitude category is used for two decisions. Once the magnitude bound has been determined – at statistics bin Xn, for example – a single statistics bin, Mn, is used to code the magnitude bit sequence for that bound.

F.1.4.4.2.1 Default conditioning for AC coefficient coding

The default value of Kx is 5. This may be modified using the DAC marker segment, as described in Annex B.

F.1.4.4.2.2 Initial conditions for AC statistical model

At the start of a scan and at each restart, all statistics bins are re-initialized to the standard default value described in Annex D.

Table F.5 – Statistical model for AC coefficient coding

Context-index	Value	Coding decision
SE	$3 \times (K - 1)$	K = EOB
S0	SE + 1	V = 0
SS	Fixed estimate	Sign of V
SN,SP	S0 + 1	Sz < 1
X1	S0 + 1	Sz < 2
X2	AC_Context(K)	Sz < 4
X3	X2 + 1	Sz < 8
.	.	.
.	.	.
X15	X2 + 13	$Sz < 2^{15}$
M2	X2 + 14	Magnitude bits if Sz < 4
M3	X3 + 14	Magnitude bits if Sz < 8
.	.	.
.	.	.
M15	X15 + 14	Magnitude bits if $Sz < 2^{15}$

F.1.5 Extended sequential DCT-based Huffman encoding process for 12-bit sample precision

This process is identical to the sequential DCT process for 8-bit precision extended to four Huffman table destinations as documented in F.1.3, with the following changes.

F.1.5.1 Structure of DC code table for 12-bit sample precision

The two's complement difference magnitudes are grouped into 16 categories, SSSS, and a Huffman code is created for each of the 16 difference magnitude categories.

The Huffman table for DC coding (see Table F.1) is extended as shown in Table F.6.

Table F.6 – Difference magnitude categories for DC coding

SSSS	Difference values
12	–4 095..–2 048,2 048..4 095
13	–8 191..–4 096,4 096..8 191
14	–16 383..–8 192,8 192..16 383
15	–32 767..–16 384,16 384..32 767

F.1.5.2 Structure of AC code table for 12-bit sample precision

The general structure of the code table is extended as illustrated in Figure F.11. The Huffman table for AC coding is extended as shown in Table F.7.

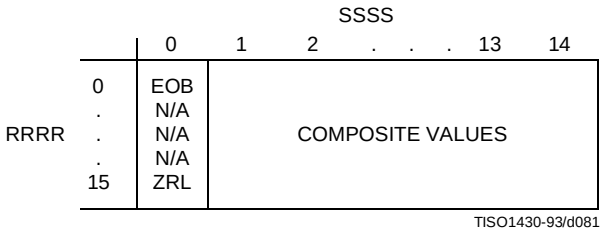


Figure F.11 – Two-dimensional value array for Huffman coding

Table F.7 – Values assigned to coefficient amplitude ranges

SSSS	AC coefficients
11	–2 047..–1 024,1 024..2 047
12	–4 095..–2 048,2 048..4 095
13	–8 191..–4 096,4 096..8 191
14	–16 383..–8 192,8 192..16 383

F.1.6 Extended sequential DCT-based arithmetic encoding process for 12-bit sample precision

The process is identical to the sequential DCT process for 8-bit precision except for changes in the precision of the FDCT computation.

The structure of the encoding procedure is identical to that specified in F.1.4 which was already defined for a 12-bit sample precision.

F.2 Sequential DCT-based decoding processes

F.2.1 Sequential DCT-based control procedures and coding models

F.2.1.1 Control procedures for sequential DCT-based decoders

The control procedures for decoding compressed image data and its constituent parts – the frame, scan, restart interval and MCU – are given in Figures E.6 to E.10. The procedure for decoding a MCU (Figure E.10) repetitively calls the procedure for decoding a data unit. For DCT-based decoders the data unit is an 8×8 block of samples.

F.2.1.2 Procedure for decoding an 8×8 block data unit

In the sequential DCT-based decoding process, decoding an 8×8 block data unit consists of the following procedures:

a) decode DC coefficient for 8×8 block using the DC table destination specified in the scan header;

b) decode AC coefficients for 8×8 block using the AC table destination specified in the scan header;

c) dequantize using table destination specified in the frame header and calculate the inverse 8×8 DCT.

F.2.1.3 Decoding models for the sequential DCT procedures

Two decoding procedures are used, one for the DC coefficient ZZ(0) and the other for the AC coefficients ZZ(1)...ZZ(63). The coefficients are decoded in the order in which they occur in the zig-zag sequence order, starting with the DC coefficient. The coefficients are represented as two's complement integers.

F.2.1.3.1 Decoding model for DC coefficients

The decoded difference, DIFF, is added to PRED, the DC value from the most recently decoded 8×8 block from the same component. Thus ZZ(0) = PRED + DIFF.

At the beginning of the scan and at the beginning of each restart interval, the prediction for the DC coefficient is initialized to zero.

F.2.1.3.2 Decoding model for AC coefficients

The AC coefficients are decoded in the order in which they occur in ZZ. When the EOB is decoded, all remaining coefficients in ZZ are initialized to zero.

F.2.1.4 Dequantization of the quantized DCT coefficients

The dequantization of the quantized DCT coefficients as described in Annex A, is accomplished by multiplying each quantized coefficient value by the quantization table value for that coefficient. The decoder shall be able to use up to four quantization table destinations.

F.2.1.5 Inverse DCT (IDCT)

The mathematical definition of the IDCT is given in A.3.3.

After computation of the IDCT, the signed output samples are level-shifted, as described in Annex A, converting the output to an unsigned representation. For 8-bit precision the level shift is performed by adding 128. For 12-bit precision the level shift is performed by adding 2 048. If necessary, the output samples shall be clamped to stay within the range appropriate for the precision (0 to 255 for 8-bit precision and 0 to 4 095 for 12-bit precision).

F.2.2 Baseline Huffman Decoding procedures

The baseline decoding procedure is for 8-bit sample precision. The decoder shall be capable of using up to two DC and two AC Huffman tables within one scan.

F.2.2.1 Huffman decoding of DC coefficients

The decoding procedure for the DC difference, DIFF, is:

T = DECODE

DIFF = RECEIVE(T)

DIFF = EXTEND(DIFF,T)

where DECODE is a procedure which returns the 8-bit value associated with the next Huffman code in the compressed image data (see F.2.2.3) and RECEIVE(T) is a procedure which places the next T bits of the serial bit string into the low order bits of DIFF, MSB first. If T is zero, DIFF is set to zero. EXTEND is a procedure which converts the partially decoded DIFF value of precision T to the full precision difference. EXTEND is shown in Figure F.12.

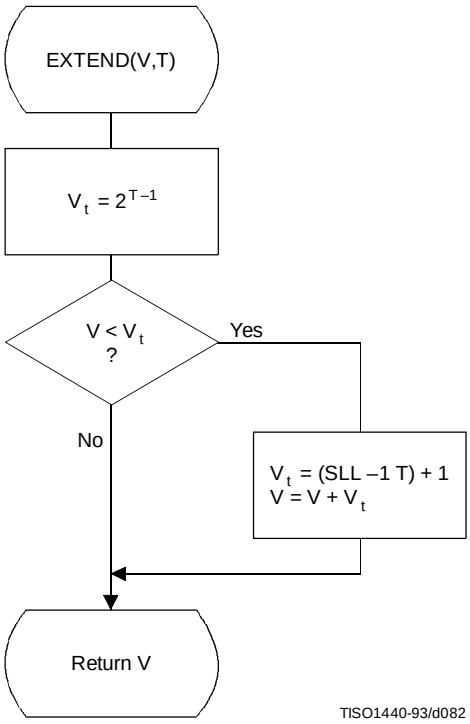


Figure F.12 – Extending the sign bit of a decoded value in V

F.2.2.2 Decoding procedure for AC coefficients

The decoding procedure for AC coefficients is shown in Figures F.13 and F.14.

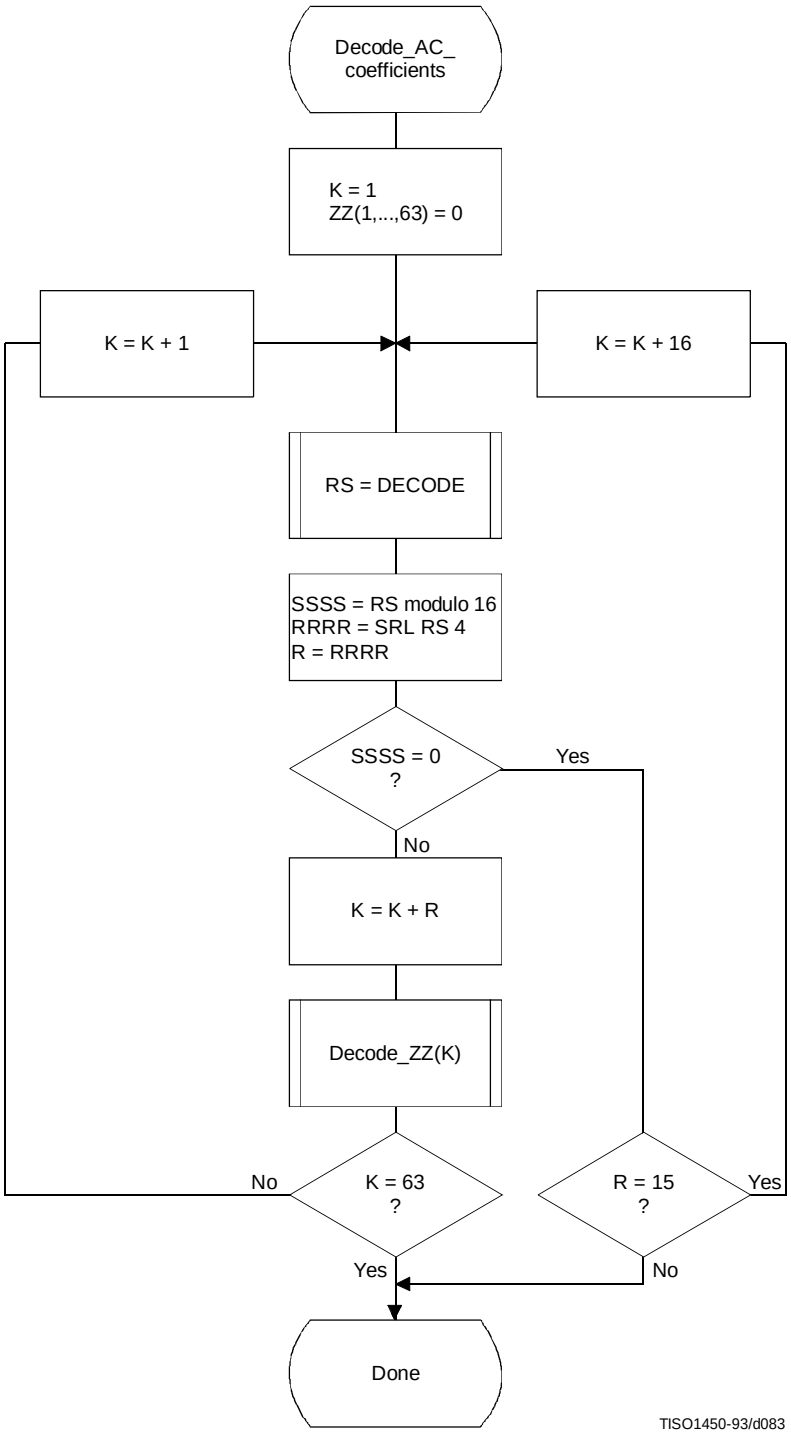


Figure F.13 – Huffman decoding procedure for AC coefficients

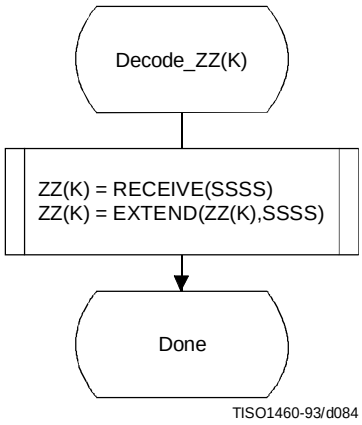


Figure F.14 – Decoding a non-zero AC coefficient

The decoding of the amplitude and sign of the non-zero coefficient is done in the procedure "Decode_ZZ(K)", shown in Figure F.14.

DECODE is a procedure which returns the value, RS, associated with the next Huffman code in the code stream (see F.2.2.3). The values SSSS and R are derived from RS. The value of SSSS is the four low order bits of the composite value and R contains the value of RRRR (the four high order bits of the composite value). The interpretation of these values is described in F.1.2.2. EXTEND is shown in Figure F.12.

F.2.2.3 The DECODE procedure

The DECODE procedure decodes an 8-bit value which, for the DC coefficient, determines the difference magnitude category. For the AC coefficient this 8-bit value determines the zero run length and non-zero coefficient category.

Three tables, HUFFVAL, HUFFCODE, and HUFFSIZE, have been defined in Annex C. This particular implementation of DECODE makes use of the ordering of the Huffman codes in HUFFCODE according to both value and code size. Many other implementations of DECODE are possible.

NOTE – The values in HUFFVAL are assigned to each code in HUFFCODE and HUFFSIZE in sequence. There are no ordering requirements for the values in HUFFVAL which have assigned codes of the same length.

The implementation of DECODE described in this subclause uses three tables, MINCODE, MAXCODE and VALPTR, to decode a pointer to the HUFFVAL table. MINCODE, MAXCODE and VALPTR each have 16 entries, one for each possible code size. MINCODE(I) contains the smallest code value for a given length I, MAXCODE(I) contains the largest code value for a given length I, and VALPTR(I) contains the index to the start of the list of values in HUFFVAL which are decoded by code words of length I. The values in MINCODE and MAXCODE are signed 16-bit integers; therefore, a value of –1 sets all of the bits.

The procedure for generating these tables is shown in Figure F.15. The procedure for DECODE is shown in Figure F.16. Note that the 8-bit "VALUE" is returned to the procedure which invokes DECODE.

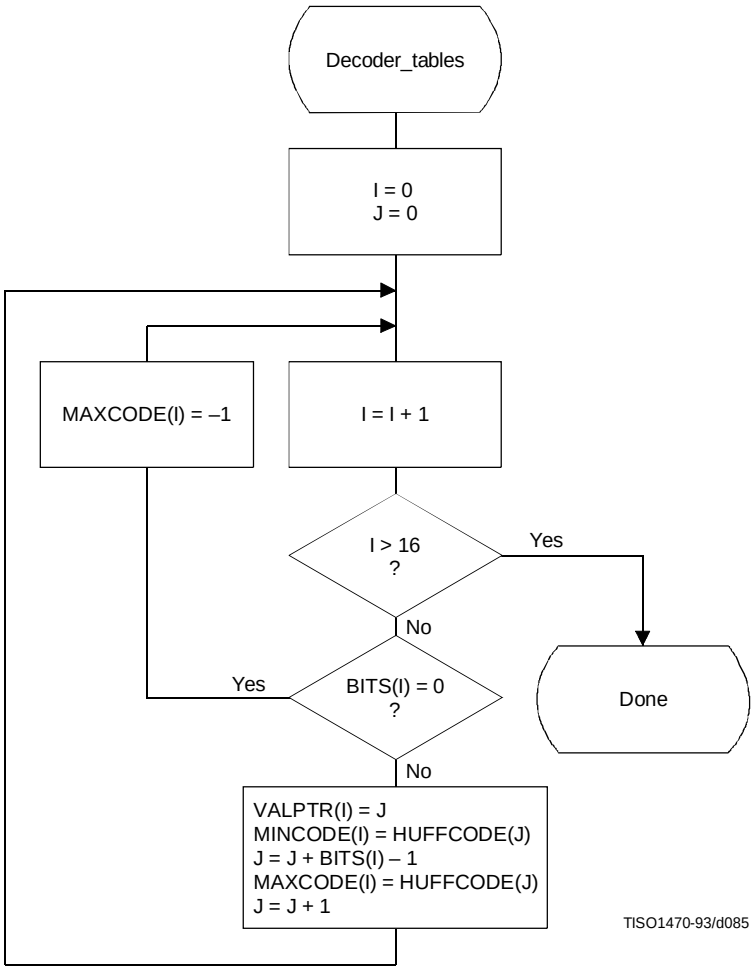


Figure F.15 – Decoder table generation

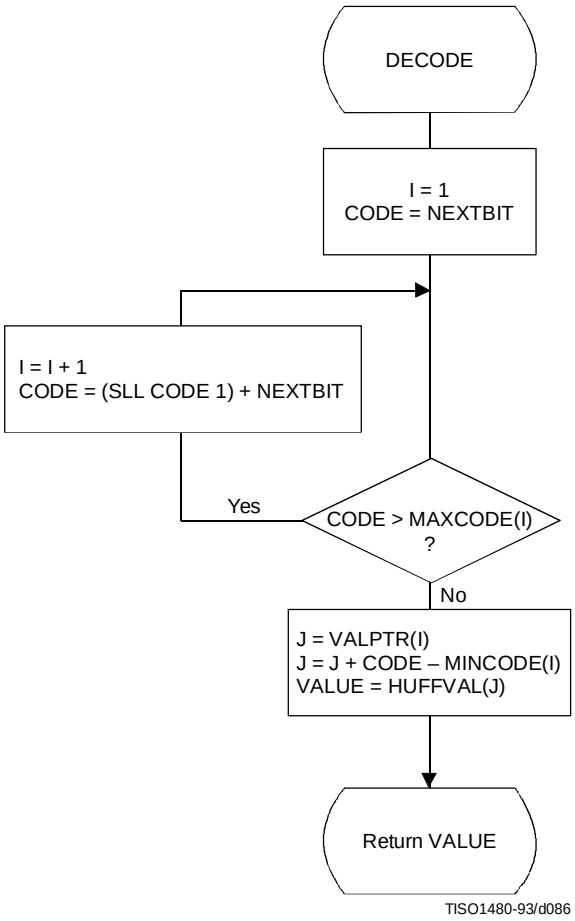


Figure F.16 – Procedure for DECODE

F.2.2.4 The RECEIVE procedure

RECEIVE(SSSS) is a procedure which places the next SSSS bits of the entropy-coded segment into the low order bits of DIFF, MSB first. It calls NEXTBIT and it returns the value of DIFF to the calling procedure (see Figure F.17).

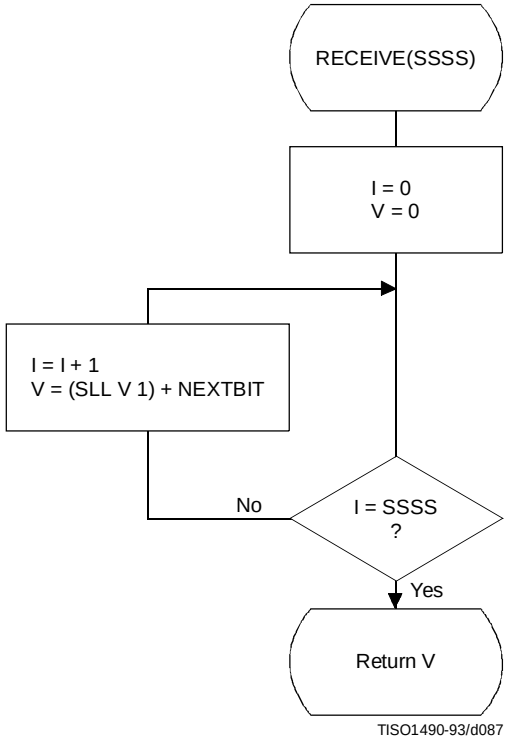


Figure F.17 – Procedure for RECEIVE(SSSS)

F.2.2.5 The NEXTBIT procedure

NEXTBIT reads the next bit of compressed data and passes it to higher level routines. It also intercepts and removes stuff bytes and detects markers. NEXTBIT reads the bits of a byte starting with the MSB (see Figure F.18).

Before starting the decoding of a scan, and after processing a RST marker, CNT is cleared. The compressed data are read one byte at a time, using the procedure NEXTBYTE. Each time a byte, B, is read, CNT is set to 8.

The only valid marker which may occur within the Huffman coded data is the RST_m marker. Other than the EOI or markers which may occur at or before the start of a scan, the only marker which can occur at the end of the scan is the DNL (define-number-of-lines).

Normally, the decoder will terminate the decoding at the end of the final restart interval before the terminating marker is intercepted. If the DNL marker is encountered, the current line count is set to the value specified by that marker. Since the DNL marker can only be used at the end of the first scan, the scan decode procedure must be terminated when it is encountered.

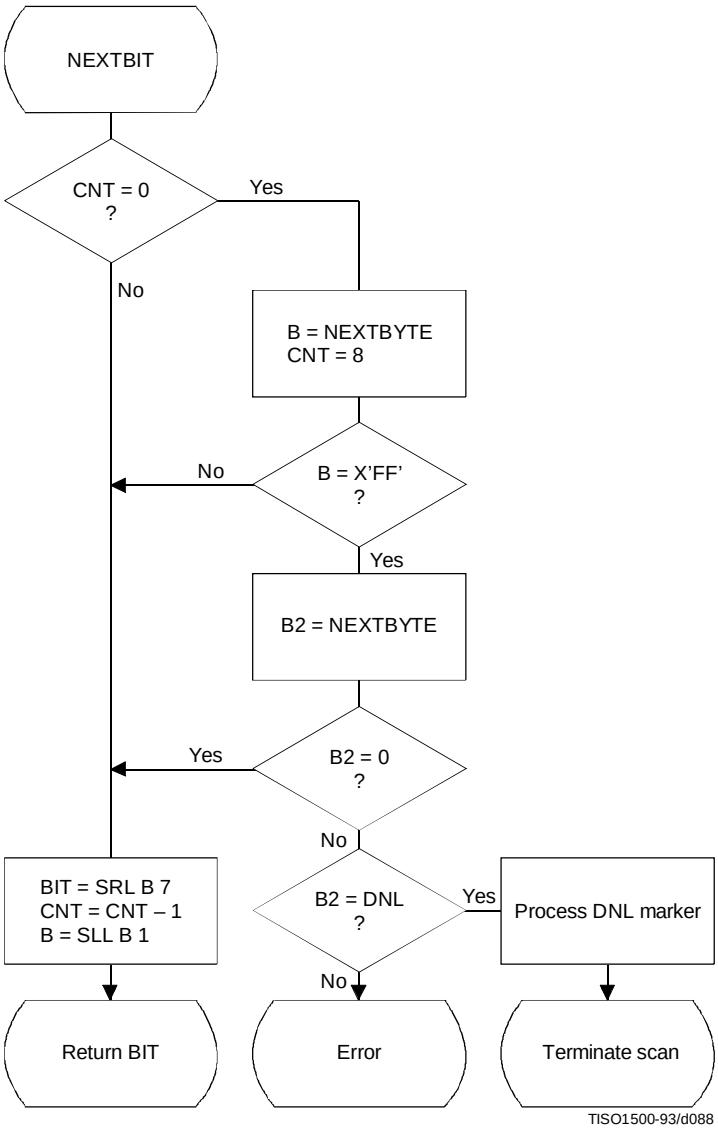


Figure F.18 – Procedure for fetching the next bit of compressed data

F.2.3 Sequential DCT decoding process with 8-bit precision extended to four sets of Huffman tables

This process is identical to the Baseline decoding process described in F.2.2, with the exception that the decoder shall be capable of using up to four DC and four AC Huffman tables within one scan. Four DC and four AC Huffman tables is the maximum allowed by this Specification.

F.2.4 Sequential DCT decoding process with arithmetic coding

This subclause describes the sequential DCT decoding process with arithmetic decoding.

The arithmetic decoding procedures for decoding binary decisions, initializing the statistical model, initializing the decoder, and resynchronizing the decoder are listed in Table D.4 of Annex D.

Some of the procedures in Table D.4 are used in the higher level control structure for scans and restart intervals described in F.2. At the beginning of scans and restart intervals, the probability estimates used in the arithmetic decoder are reset to the standard initial value as part of the Initdec procedure which restarts the arithmetic coder.

The statistical models defined in F.1.4.4 also apply to this decoding process.

The decoder shall be capable of using up to four DC and four AC conditioning tables and associated statistics areas within one scan.

F.2.4.1 Arithmetic decoding of DC coefficients

The basic structure of the decision sequence for decoding a DC difference value, DIFF, is shown in Figure F.19. The equivalent structure for the encoder is found in Figure F.4.

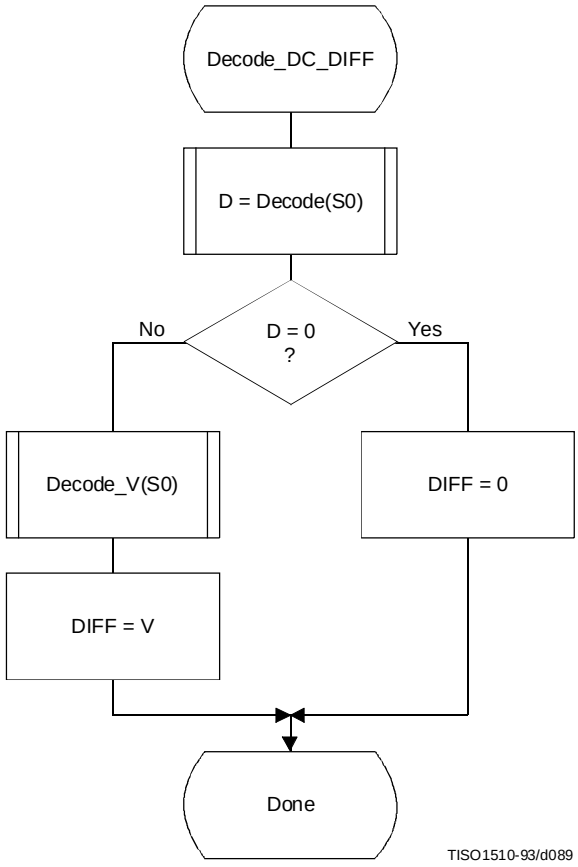


Figure F.19 – Arithmetic decoding of DC difference

The context-indices used in the DC decoding procedures are defined in Table F.4 (see F.1.4.4.1.3).

The “Decode” procedure returns the value “D” of the binary decision. If the value is not zero, the sign and magnitude of the non-zero DIFF must be decoded by the procedure “Decode_V(S0)”.

F.2.4.2 Arithmetic Decoding of AC coefficients

The AC coefficients are decoded in the order that they occur in ZZ(1,...,63). The encoder procedure for the coding process is found in Figure F.5. Figure F.20 illustrates the decoding sequence.

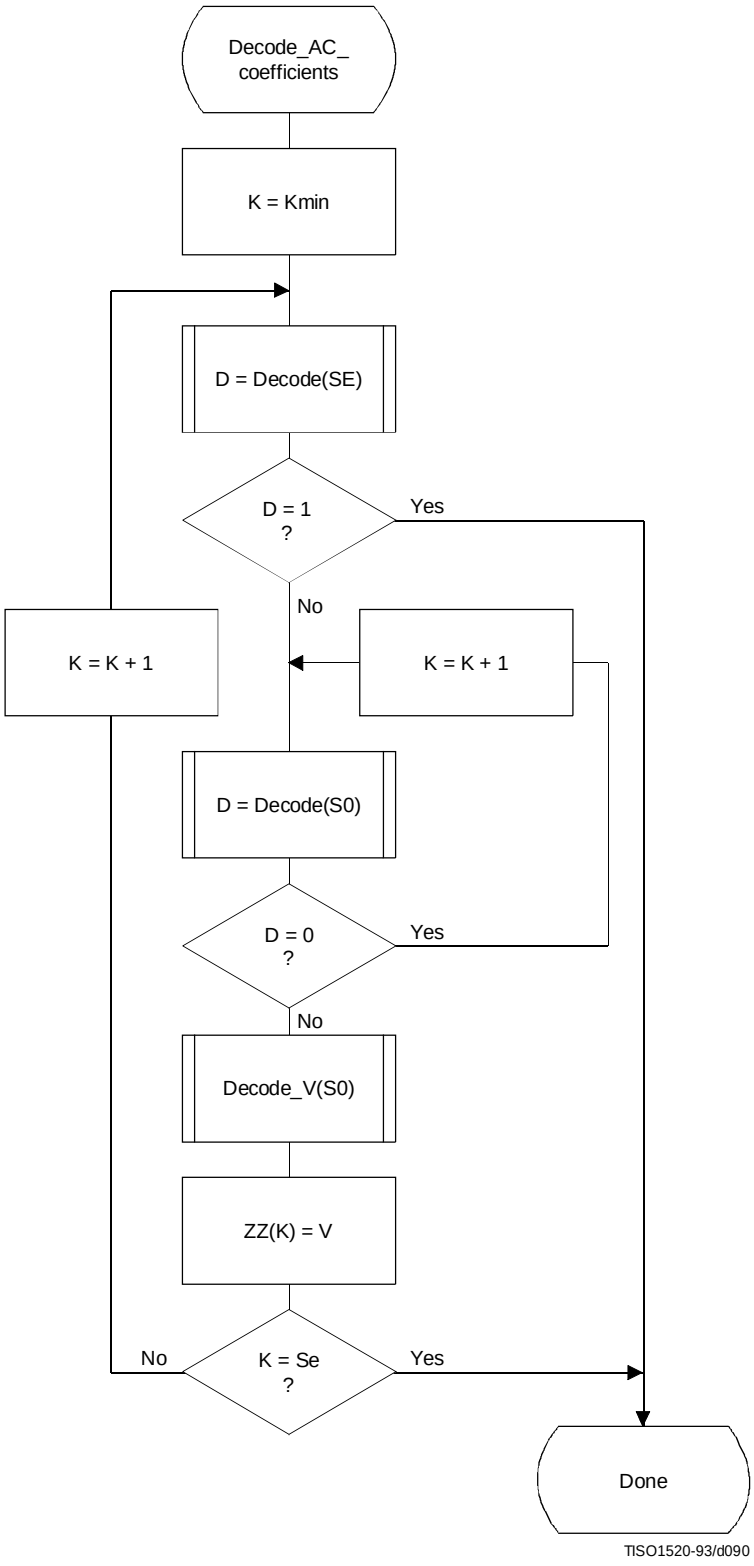


Figure F.20 – Procedure for decoding the AC coefficients

The context-indices used in the AC decoding procedures are defined in Table F.5 (see F.1.4.4.2).

In Figure F.20, K is the index to the zig-zag sequence position. For the sequential scan, Kmin = 1 and Se = 63. The decision at the top of the loop is the EOB decision. If the EOB occurs (D = 1), the remaining coefficients in the block are set to zero. The inner loop just below the EOB decoding decodes runs of zero coefficients. Whenever the coefficient is non-zero, "Decode_V" decodes the sign and magnitude of the coefficient. After each non-zero coefficient is decoded, the EOB decision is again decoded unless K = Se.

F.2.4.3 Decoding the binary decision sequence for non-zero DC differences and AC coefficients

Both the DC difference and the AC coefficients are represented as signed two's complement 16-bit integer values. The decoding decision tree for these signed integer values is the same for both the DC and AC coding models. Note, however, that the statistical models are not the same.

F.2.4.3.1 Arithmetic decoding of non-zero values

Denoting either DC differences or AC coefficients as V, the non-zero signed integer value of V is decoded by the sequence shown in Figure F.21. This sequence first decodes the sign of V. It then decodes the magnitude category of V (Decode_log2_Sz), and then decodes the low order magnitude bits (Decode_Sz_bits). Note that the value decoded for Sz must be incremented by 1 to get the actual coefficient magnitude.

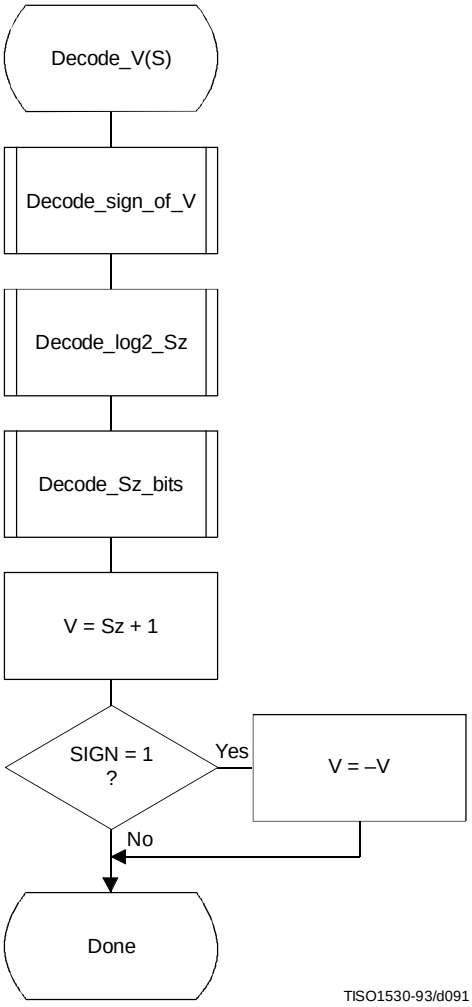


Figure F.21 – Sequence of procedures in decoding non-zero values of V

F.2.4.3.1.1 Decoding the sign

The sign is decoded by the procedure shown in Figure F.22.

The context-indices are defined for DC decoding in Table F.4 and AC decoding in Table F.5.

If SIGN = 0, the sign of the coefficient is positive; if SIGN = 1, the sign of the coefficient is negative.

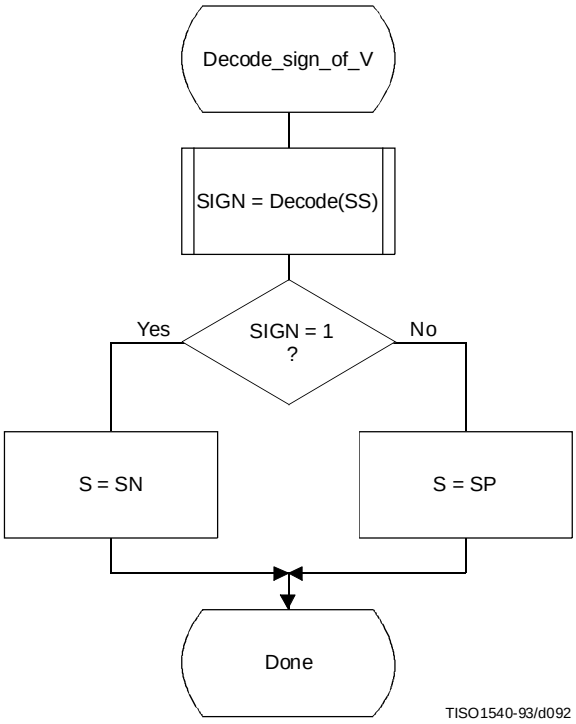


Figure F.22 – Decoding the sign of V

F.2.4.3.1.2 Decoding the magnitude category

The context-index S is set in Decode_sign_of_V and the context-index values X1 and X2 are defined for DC coding in Table F.4 and for AC coding in Table F.5.

In Figure F.23, M is set to the upper bound for the magnitude and shifted left until the decoded decision is zero. It is then shifted right by 1 to become the leading bit of the magnitude of Sz.

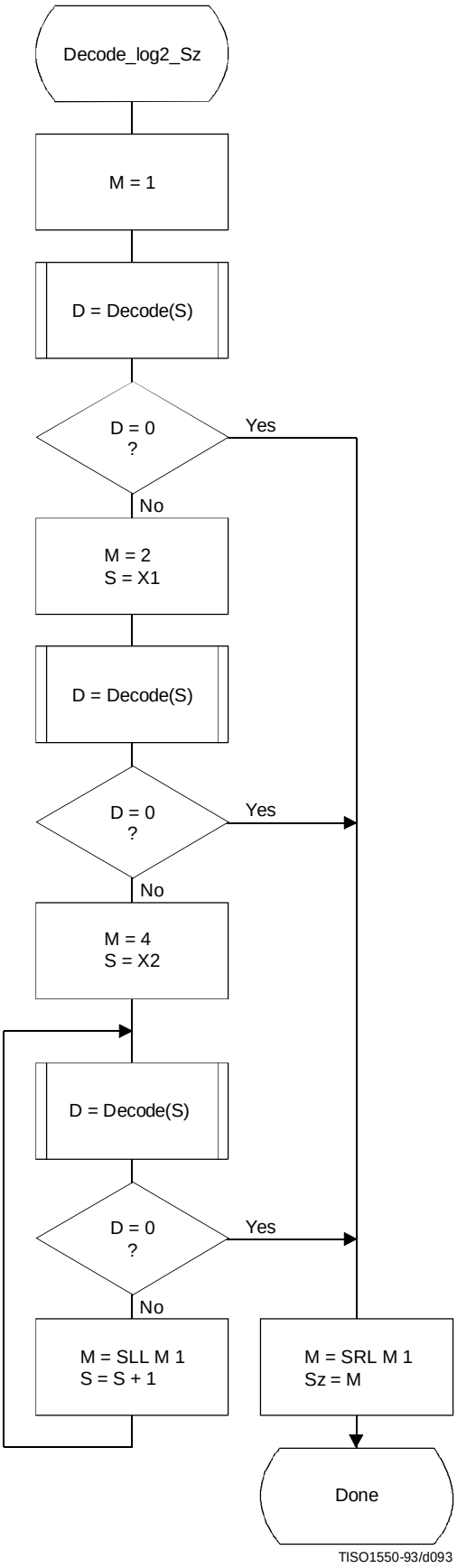


Figure F.23 – Decoding procedure to establish the magnitude category

F.2.4.3.1.3 Decoding the exact value of the magnitude

After the magnitude category is decoded, the low order magnitude bits are decoded. These bits are decoded in order of decreasing bit significance. The procedure is shown in Figure F.24.

The context-index S is set in Decode_log2_Sz.

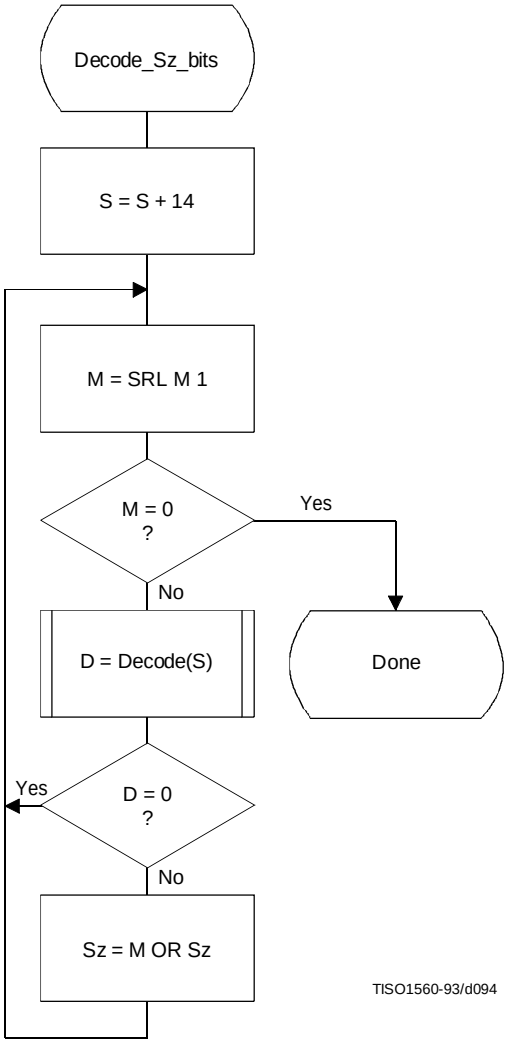


Figure F.24 – Decision sequence to decode the magnitude bit pattern

F.2.4.4 Decoder restart

The RST_m markers which are added to the compressed data between each restart interval have a two byte value which cannot be generated by the coding procedures. These two byte sequences can be located without decoding, and can therefore be used to resynchronize the decoder. RST_m markers can therefore be used for error recovery.

Before error recovery procedures can be invoked, the error condition must first be detected. Errors during decoding can show up in two places:

a) The decoder fails to find the expected marker at the point where it is expecting resynchronization.

b) Physically impossible data are decoded. For example, decoding a magnitude beyond the range of values allowed by the model is quite likely when the compressed data are corrupted by errors. For arithmetic decoders this error condition is extremely important to detect, as otherwise the decoder may reach a condition where it uses the compressed data very slowly.

NOTE – Some errors will not cause the decoder to lose synchronization. In addition, recovery is not possible for all errors; for example, errors in the headers are likely to be catastrophic. The two error conditions listed above, however, almost always cause the decoder to lose synchronization in a way which permits recovery.

In regaining synchronization, the decoder can make use of the modulo 8 coding restart interval number in the low order bits of the RST_m marker. By comparing the expected restart interval number to the value in the next RST_m marker in the compressed image data, the decoder can usually recover synchronization. It then fills in missing lines in the output data by replication or some other suitable procedure, and continues decoding. Of course, the reconstructed image will usually be highly corrupted for at least a part of the restart interval where the error occurred.

F.2.5 Sequential DCT decoding process with Huffman coding and 12-bit precision

This process is identical to the sequential DCT process defined for 8-bit sample precision and extended to four Huffman tables, as documented in F.2.3, but with the following changes.

F.2.5.1 Structure of DC Huffman decode table

The general structure of the DC Huffman decode table is extended as described in F.1.5.1.

F.2.5.2 Structure of AC Huffman decode table

The general structure of the AC Huffman decode table is extended as described in F.1.5.2.

F.2.6 Sequential DCT decoding process with arithmetic coding and 12-bit precision

The process is identical to the sequential DCT process for 8-bit precision except for changes in the precision of the IDCT computation.

The structure of the decoding procedure in F.2.4 is already defined for a 12-bit input precision.

EXHIBIT 3

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE

U.S. PHILIPS CORPORATION, Plaintiff, v. EASTMAN KODAK COMPANY, Defendant.	)	C.A. No. 06-251-GMS

PLAINTIFF U.S. PHILIPS CORPORATION'S OBJECTIONS AND RESPONSES TO DEFENDANT EASTMAN KODAK COMPANY'S FIRST SET OF INTERROGATORIES TO PLAINTIFF U.S. PHILIPS CORPORATION (NOS. 1-12)

Under Federal Rule of Civil Procedure 33, and subject to the following objections, Plaintiff U.S. Philips Corporation ("Philips") submits the following Responses to Defendant Eastman Kodak Company's ("Kodak") First Set of Interrogatories to Philips (Nos. 1-12).

GENERAL OBJECTIONS

1. Nothing in these responses should be construed as waiving rights or objections which might otherwise be available to Philips, nor should Philips' responses to any of these discovery requests be deemed an admission of relevancy, materiality, or admissibility in evidence of the interrogatories or the responses thereto.

2. To the extent that Kodak's interrogatories seek information from internal work product files from any of Philips' counsel, including, but not limited to, Finnegan, Henderson, Farabow, Garrett & Dunner, L.L.P. and Ashby & Geddes, P.A., Philips objects to providing such information and to the production or listing of these documents on a withheld document list.

3. The incidental production of any information, document, or thing covered by any of Philips' General or Specific Objections shall not be construed as a waiver of the objection with respect to any other information, document, or thing.

4. Any Philips response to a particular interrogatory indicating that it will produce documents means that Philips will produce such documents to the extent they exist, can be located after a reasonable search of Philips' files, and are not subject to the attorney/client privilege, work-product immunity, or other applicable privilege or objection. A response that documents will be produced shall not be construed as a representation that such documents exist or existed. Any such response indicates only that documents responsive to the request, subject to applicable objections, will be produced if any such documents are found after a reasonable search.

5. Philips reserves the right to mask from documents produced any matter that is not called for or with respect to which Philips has objected to the request for production.

6. Philips reserves the right to produce voluminous or atypical documents by making them available for inspection and copying by Kodak at Philips' facilities or at Finnegan, Henderson, Farabow, Garrett & Dunner, L.L.P.'s facilities.

7. Philips objects to the interrogatories as overly broad, unreasonably cumulative, and unduly burdensome to the extent they seek information from electronic backup sources or the recovery of deleted electronic data or information.

8. Philips objects to the interrogatories as overly broad and unduly burdensome to the extent they purport to impose obligations or seek information beyond what is required under Rules 26, 33 and 34 of the Federal Rules of Civil Procedure, the local rules, and applicable case law. Philips objects to each of these interrogatories to the extent that the information sought

would improperly require Philips to create or compile collections of information that do not currently exist, or formulate opinions or conclusions that do not currently exist.

9. Philips objects to the interrogatories as unduly burdensome and overly broad to the extent they ask Philips to obtain or provide information that is not available from a reasonable search of its files or a reasonable inquiry of its current employees. Similarly, Philips objects to obtaining or providing information that is not in Philips' possession, custody, or control, such as information known to persons not currently employed by Philips or information in the custody of third parties.

10. Philips objects to the interrogatories to the extent that they seek documents and information protected by attorney-client privilege or work product doctrine, or prepared in anticipation of litigation or for trial. Any production of attorney-client privileged or work-product protected information is inadvertent and shall not constitute waiver of any privilege or protection.

11. Philips objects to the interrogatories to the extent that they seek confidential information of third parties subject to a nondisclosure agreement or other obligations of secrecy.

12. Philips objects to the interrogatories as unreasonably burdensome to the extent they request information that can be independently obtained by Kodak from other sources, such as documents in the custody and control of Kodak and materials available from the U.S. Patent and Trademark Office or available on the Internet.

13. Philips objects to the interrogatories to the extent that they purport to require Philips to review an unreasonably large volume of electronic mail ("e-mail") files. If necessary, Philips will review and produce relevant, non-privileged documents responsive to the requests from e-mail files pursuant to an agreed upon procedure.

14. Philips objects to the interrogatories as unduly burdensome, overly broad, and not relevant to any claim or defense of any party to this action to the extent they ask Philips to obtain or provide information on behalf of "past and present corporate parents, past or present subsidiaries of its corporate parents, . . ." Philips will perform a reasonable search and make reasonable inquiries, but cannot obtain or provide information that is not currently in Philips' possession, custody, or control. Moreover, the information of separate entities that are not parties to this action is not within the scope of permissible discovery since such information is not in Philips' possession, custody or control, nor is it relevant to any claim or defense of the parties to this action.

15. Philips objects to the interrogatories as vague, unduly burdensome, overly broad, and not relevant to the extent they ask Philips to obtain or provide information for an unspecified and unlimited time period.

16. Philips objects to the interrogatories as unduly burdensome and overly broad to the extent they ask Philips to provide information that is not relevant and necessary to Kodak's case and which would require disclosure of trade secrets or other confidential research, development, or commercial information. Whenever requested information is confidential and its disclosure might be harmful, "the burden shifts to the party seeking discovery to establish that disclosure of trade secrets and confidential information is relevant and necessary to its case." *American Standard Inc. v. Pfizer Inc.*, 828 F.2d 734, 741 (Fed. Cir. 1987).

17. Philips objects to any interrogatory seeking information about the exploratory efforts of Philips' counsel in investigating Philips' claims or Kodak's counterclaims or defenses, and in preparing this case for trial. Such information would tend to reveal counsel's mental

impressions, conclusions, opinions, or legal theories. Consequently, such information is beyond the ambit of discovery. *See* Fed. R. Civ. P. 26(b)(3).

18. Philips objects to the definition of "document" as overly broad and unduly burdensome to the extent it includes information beyond what is required under Rule 34 of the Federal Rules of Civil Procedure.

19. Philips objects to the definition of "Related Philips Patents" as vague, overly broad and unduly burdensome as it purports to extend to "foreign patents corresponding to or related in any way to the Patent-in-Suit, the invention disclosed in the Patent-in-Suit or any other patent related to video compression technology assigned in whole or in part to Philips."

20. Philips objects to the definition of "Related Philips Patent Applications" as vague, overly broad and unduly burdensome as it purports to extend to "any . . . foreign patent applications that led to or matured into . . . any of the Related Philips Patents" and "any . . . foreign patent application from or through which the Patent-in-Suit or any of the Related Philips Patents claim priority, and any predecessors, continuations, divisionals or continuations-in-part of any of the foregoing patent applications."

21. Philips objects to the definition of "JPEG Standard" as vague and overly broad as it purports to extend to "all national standards body versions, equivalents, or variations of the ISO standard or the CCITT standard."

22. Philips will supplement its responses in accordance with Rule 26(e).

23. The General Objections apply to all of Kodak's interrogatories, including subparts. To the extent that any particular General Objection is cited in response to any specific discovery requests, those specific citations are provided because they are believed to be particularly applicable to the discovery request and are not to be construed as a waiver of any

other General Objections applicable to information falling within the scope of the discovery request.

24. The following responses reflect Philips' present knowledge, information, and belief, and may be subject to change or modification based upon Philips' further discovery or facts or circumstances that may subsequently come to Philips' knowledge.

RESPONSES AND OBJECTIONS

Interrogatory No. 1:

For each claim of the Patent-in-Suit that Philips contends that Kodak infringes, identify each Accused Product of Kodak and describe in detail how each asserted claim is allegedly infringed by each Accused Product, including an identification of where each element of each asserted claim is found in each Accused Product, an indication of whether each element of each asserted claim is claimed to be literally present or present under the doctrine of equivalents and whether infringement is alleged to be direct, induced or contributory, and, for each element that Philips contends is governed by 35 U.S.C. § 112 ¶6, the identity of the structure(s), act(s), or material(s) in the Accused Product that performs the claimed function. Please identify all facts, persons, documents, communications and things Philips contends support its response.

Response to Interrogatory No. 1:

Philips incorporates by reference each of the applicable general objections as though fully set forth herein. Philips specifically objects to this interrogatory as improper and unduly burdensome to the extent it prematurely seeks the disclosure of information, such as claim charts, at this early stage of discovery. Philips objects to this interrogatory as premature to the extent discovery of Kodak's documents, materials, and information is needed to respond. Philips objects to this interrogatory to the extent it seeks information that is protected by the attorney-client privilege or by the attorney work product immunity. Because it consists of multiple parts and sub-parts, Interrogatory No. 1 is improperly listed as a single interrogatory.

Subject to and without waiving any of its general and specific objections, and reserving its right to supplement its response as discovery proceeds, Philips responds to this interrogatory as follows:

As presently advised, the infringing JPEG image encoding hardware products of Kodak include, but are not limited to, digital cameras, film scanners, and document scanners, such as the Kodak EasyShare Digital Camera-Model No. C300, Kodak EasyShare Digital Camera-Model No. C310, Kodak EasyShare Zoom Digital Camera-Model No. C315, Kodak EasyShare Zoom Digital Camera-Model No. C330, Kodak EasyShare Zoom Digital Camera-Model No. C340, Kodak EasyShare Zoom Digital Camera-Model No. C360, Kodak EasyShare Zoom Digital Camera-Model No. C530, Kodak EasyShare Zoom Digital Camera-Model No. C663, Kodak EasyShare Zoom Digital Camera-Model No. CD33, Kodak EasyShare Zoom Digital Camera-Model No. CD40, Kodak EasyShare Zoom Digital Camera-Model No. CD43, Kodak EasyShare Zoom Digital Camera-Model No. CX4200, Kodak EasyShare Zoom Digital Camera-Model No. CX4210, Kodak EasyShare Zoom Digital Camera-Model No. CX4230, Kodak EasyShare Zoom Digital Camera-Model No. CX4300, Kodak EasyShare Zoom Digital Camera-Model No. CX4310, Kodak EasyShare Zoom Digital Camera-Model No. CX6200, Kodak EasyShare Zoom Digital Camera-Model No. CX6230, Kodak EasyShare Zoom Digital Camera-Model No. CX6330, Kodak EasyShare Zoom Digital Camera-Model No. CX6445, Kodak EasyShare Zoom Digital Camera-Model No. CX7220, Kodak EasyShare Digital Camera-Model No. CX7300, Kodak EasyShare Digital Camera-Model No. CX7310, Kodak EasyShare Zoom Digital Camera-Model No. CX7330, Kodak EasyShare Zoom Digital Camera-Model No. CX7430, Kodak EasyShare Zoom Digital Camera-Model No. CX7525, Kodak EasyShare Zoom Digital Camera-Model No. CX7530, Kodak EasyShare Zoom Digital Camera-Model No. DX3215, Kodak

EasyShare Zoom Digital Camera-Model No. DX3500, Kodak EasyShare Zoom Digital Camera-Model No. DX3600, Kodak EasyShare Zoom Digital Camera-Model No. DX3700, Kodak EasyShare Zoom Digital Camera-Model No. DX3900, Kodak EasyShare Zoom Digital Camera-Model No. DX4330, Kodak EasyShare Zoom Digital Camera-Model No. DX4530, Kodak EasyShare Zoom Digital Camera-Model No. DX4900, Kodak EasyShare Zoom Digital Camera-Model No. DX6340, Kodak EasyShare Zoom Digital Camera-Model No. DX6440, Kodak EasyShare Zoom Digital Camera-Model No. DX6490, Kodak EasyShare Zoom Digital Camera-Model No. DX7440, Kodak EasyShare Zoom Digital Camera-Model No. DX7590, Kodak EasyShare Zoom Digital Camera-Model No. DX7630, Kodak EasyShare Zoom Digital Camera-Model No. LS420, Kodak EasyShare Zoom Digital Camera-Model No. LS443, Kodak EasyShare Zoom Digital Camera-Model No. LS633, Kodak EasyShare Zoom Digital Camera-Model No. LS743, Kodak EasyShare Zoom Digital Camera-Model No. LS753, Kodak EasyShare Zoom Digital Camera-Model No. LS755, Kodak EasyShare Zoom Digital Camera-Model No. P850, Kodak EasyShare Zoom Digital Camera-Model No. P880, Kodak EasyShare Zoom Digital Camera-Model No. V530, Kodak EasyShare Zoom Digital Camera-Model No. V550, Kodak EasyShare Zoom Digital Camera-Model No. V570, Kodak EasyShare Zoom Digital Camera-Model No. Z650, Kodak EasyShare Zoom Digital Camera-Model No. Z700, Kodak EasyShare Zoom Digital Camera-Model No. Z730, Kodak EasyShare Zoom Digital Camera-Model No. Z740, Kodak EasyShare Zoom Digital Camera-Model No. Z760, Kodak EasyShare Zoom Digital Camera-Model No. Z7590, Kodak i7300 Scanner, Kodak Digital Science Intelligent Microimage Scanner, Kodak i30 Scanner, Kodak i40 Scanner, Kodak i150 Scanner, Kodak i160 Scanner, Kodak i250 Scanner, Kodak i260 Scanner, Kodak i280 Scanner,

Kodak i610 Scanner, Kodak i620 Scanner, Kodak i640 Scanner, Kodak i660 Scanner, Kodak 3590C Scanner, Kodak 3590DP Scanner, Kodak 4500 Scanner, and Kodak 4500DP Scanner.

As presently advised, the infringing JPEG image encoding software products of Kodak include, but are not limited to, Kodak EasyShare Software, Kodak i7300 Scanner Application Software, and Kodak Capture Software.

As presently advised, the infringing JPEG image encoding services of Kodak include, but are not limited to, JPEG encoding scanning services, such as the Kodak Picture CD service.

As presently advised, such Kodak products and services follow specific procedures for the encoding of images that are set forth in the JPEG Standard described in CCITT Recommendation T.81 and ISO/IEC 10918-1.

Because the Patent-in-Suit covers such specific procedures for the encoding of images that are set forth in the JPEG Standard described in CCITT Recommendation T.81 and ISO/IEC 10918-1, as shown in the attached charts (see Attachment A), subject to updating as discovery proceeds and as claim language is construed by this Court, such Kodak products and services literally infringe claims 3, 4, 7, 8, and 11 of the Patent-in-Suit:

To the extent Kodak has performed the steps set forth in claims 3, 4, 7, 8, and 11 of the Patent-in-Suit, such as by use (including testing) of its JPEG image encoding hardware products or JPEG image encoding software products, or by performance of its JPEG image encoding services, the infringement by Kodak is direct. To the extent that Kodak has, after having knowledge of the Patent-in-Suit, offered to sell, sold, or imported in the United States any of its JPEG image encoding hardware products or JPEG image encoding software products, Kodak has also contributed to infringement of the Patent-in-Suit, since these products are material or apparatus for use in practicing a patented process, constitute a material part of the invention, are

especially made or adapted for use in infringement of the Patent-in-Suit, and are not staple articles of commerce suitable for substantial noninfringing use. To the extent that Kodak has, after having knowledge of the Patent-in-Suit, engaged in any actions which in fact cause, urge, encourage, or aid another to infringe the Patent-in-Suit, such as Kodak's marketing and sale of JPEG image encoding hardware products and JPEG image encoding software products that are used by customers to carry out the claimed method, Kodak has also induced infringement of the Patent-in-Suit,

Interrogatory No. 2:

Describe with particularity the basis for Philips contention that Kodak's alleged infringement of the asserted claims of the Patent-in-Suit has been willful and deliberate including an identification of when and how Kodak was put on notice of the Patent-in-Suit. Please identify all facts, persons, documents, communications and things Philips contends support its response.

Response to Interrogatory No. 2:

Philips incorporates by reference each of the applicable general objections as though fully set forth herein. Philips specifically objects to this interrogatory to the extent it seeks information that is protected by the attorney-client privilege or the attorney work product immunity. Philips objects to this interrogatory as premature to the extent discovery of Kodak's documents, materials, and information are needed to respond. Philips objects to this interrogatory as unduly burdensome to the extent that it seeks information already in Kodak's possession, custody, or control. Philips objects to this interrogatory as unduly burdensome to the extent it requires Philips to respond in a manner beyond that required by the Federal Rules of Civil Procedure.

Subject to and without waiving any of its general and specific objections and reserving its right to supplement its response as discovery proceeds, Philips responds to this interrogatory as follows:

By letter dated October 1, 2002, sent by Jack D. Slobod on behalf of U.S. Philips Corporation and addressed to Thomas H. Close, Group Patent Counsel of Eastman Kodak Company, Kodak was made aware of U.S. Pat. No. 4,901,075 ("the '075 patent"). Based upon Philips' current understanding, after being made aware of the '075 patent, Kodak made, used, sold, or offered to sell infringing products and services, and induced others to infringe or contributed to the infringement by others. Moreover, Kodak has not come forward with any evidence that it continued its infringement with a good faith belief that the '075 patent was not infringed, invalid, or unenforceable. Therefore, under the circumstances, Kodak's infringement has been and continues to be willful.

Philips reserves the right to amend its allegations and supplement this answer based upon further discovery.

Interrogatory No. 3:

For each claim identified in response to Interrogatory No. 1, identify where, when, how and by whom the subject matter described by that claim was first conceived, actually reduced to practice, constructively reduced to practice, known or used by others in the United States, patented or described in a printed publication anywhere in the world, put in public use in the United States, offered for sale in the United States, or disclosed to any person not then employed by Philips. Please identify all facts, persons, documents, communications and things Philips contends support its response.

Response to Interrogatory No. 3:

Philips incorporates by reference each of the applicable general objections as though fully set forth herein. Philips specifically objects to this interrogatory to the extent it seeks information that is protected by the attorney-client privilege or the attorney work product

immunity. Philips objects to the extent this interrogatory purports to require Philips to make investigations and legal determinations that it has not previously made. Philips objects to this interrogatory as prematurely calling for expert opinions. Philips objects to this interrogatory as unduly burdensome to the extent it requires Philips to respond in a manner beyond that required by the Federal Rules of Civil Procedure or this Court's Local Rules. Because it consists of multiple parts and sub-parts, Interrogatory No. 3 is improperly listed as a single interrogatory.

Subject to and without waiving any of its general and specific objections and reserving its right to supplement its response as discovery proceeds, Philips responds to this interrogatory as follows:

As presently advised and subject to updating, the earliest conception of the subject matter of the claims of the Patent-in-Suit currently known to Philips occurred outside the United States prior to September 13, 1986, by Peter Vogel, who is the named inventor of the Patent-in-Suit,

As presently advised and subject to updating, the earliest reduction to practice of the subject matter of the claims of the Patent-in-Suit currently known to Philips was constructive and occurred on September 13, 1986, the filing date of German Patent Application No. 3,631,252, November 8, 1986, the filing date of German Patent Application No. 3,638,127, and May 23, 1987, the filing date of German Patent Application No. 3,717,399.

Peter Vogel, the named inventor of the Patent-in-Suit, is likely to have knowledge regarding dates of conception and reduction to practice of each claim of the Patent-in-Suit.

In addition, pursuant to Rule 33(d) of the Federal Rules of Civil Procedure, Philips will produce copies of documents in Philips' possession, custody, or control that are not otherwise protected by privilege exceptions and can be produced without violation of a court order or an

agreement, and from which information responsive to this interrogatory may be derived or ascertained, to the extent such documents exist, at a mutually convenient time.

Interrogatory No. 4:

Identify all Prior Art and all alleged Prior Art known to Philips that is relevant, or has been asserted by others to be relevant, to the Patent-in-Suit, the Related Philips Patents or the Related Philips Patent Applications, and separately state, as to each item of Prior Art, the date and circumstances under which Philips first became aware thereof and if the Prior Art was known to the inventor or prosecuting attorneys of the Patent-in-Suit before the issue date of that patent. Please identify all facts, persons, documents, communications and things Philips contends support its response.

Response to Interrogatory No. 4:

Philips incorporates by reference each of the applicable general objections as though fully set forth herein. Philips specifically objects to this interrogatory as overly broad and unduly burdensome to the extent it purports to extend to "the Related Philips Patents or the Related Philips Patent Applications." Philips objects to this interrogatory as not relevant to a claim or defense of any party or likely to lead to the discovery of admissible evidence to the extent it extends beyond the subject matter of the Patent-in-Suit. Philips objects to the extent this interrogatory purports to require Philips to make investigations and legal determinations that it has not previously made. Philips objects to this interrogatory as prematurely calling for expert opinions. Philips objects to this interrogatory to the extent it seeks information that is protected by the attorney-client privilege or the attorney work product immunity. Philips objects to this interrogatory as unduly burdensome to the extent that it seeks information that can be independently obtained by Kodak from other sources, such as materials available from the U.S. Patent and Trademark Office or foreign patent offices. Philips objects to this interrogatory as unduly burdensome to the extent it requires Philips to respond in a manner beyond that required by the Federal Rules of Civil Procedure or this Court's Local Rules.

Subject to and without waiving any of its general and specific objections and reserving its right to supplement its response as discovery proceeds, Philips responds to this interrogatory as follows:

Pursuant to Rule 33(d) of the Federal Rules of Civil Procedure, Philips will produce copies of documents in Philips' possession, custody, or control that are not otherwise protected by privilege exceptions and can be produced without violation of a court order or agreement, and from which information responsive to this interrogatory may be derived or ascertained, to the extent such documents exist, at a mutually convenient time.

Interrogatory No. 5:

For each claim identified in response to Interrogatory No. 1, identify the date on which Philips first became aware of Kodak's alleged infringement and, if Philips contends that it is not barred by laches, waiver and/or estoppel from recovering damages from Kodak, describe in detail all factual and legal bases for Philips' contention, including a detailed description of each reason Philips failed to assert the Patent-in-Suit against Kodak between 1990 and 2006 and the factual and legal bases for any contention that Philips did not unreasonably delay in the filing of the Complaint and any contention that Kodak has not suffered any economic or evidentiary prejudice [a]s a result of Philips' delay. Please identify all facts, persons, documents, communications and things Philips contends support its response.

Response to Interrogatory No. 5:

Philips incorporates by reference each of the applicable general objections as though fully set forth herein. Philips specifically objects to this interrogatory to the extent it seeks information that is protected by the attorney-client privilege or the attorney work product immunity. Philips objects to this interrogatory as unduly burdensome to the extent it requires Philips to respond in a manner beyond that required by the Federal Rules of Civil Procedure or this Court's Local Rules. Because it consists of multiple parts and sub-parts, Interrogatory No. 5 is improperly listed as a single interrogatory.

As for facts concerning the timing of Philips' litigation against Kodak, Kodak is well aware of Philips' efforts to resolve this dispute out of court, as reflected in the continuous and bilateral communications between the parties that have taken place over the last several years. Kodak is also aware why Philips filed suit in April 18, 2006, since Kodak had in bad faith refused to license Philips' intellectual property and continued to use it. As such, Philips objects to this interrogatory to the extent that it seeks information in Kodak's possession, custody, and/or control, either because it has already been provided to Kodak or because it is already known to Kodak.

Subject to and without waiving any of its general and specific objections and reserving its right to supplement its response as discovery proceeds, Philips responds to this interrogatory as follows:

As presently advised and subject to updating, Philips became aware of Kodak's infringement of the '075 patent during the period between December 6, 2000 and June 20, 2002. Philips is unaware of any factual or legal basis to support a contention that it is barred by laches, waiver and/or estoppel from recovering damages from Kodak. Philips did in fact "assert" the Patent-in-Suit or its foreign counterparts against Kodak during the period between 2000 and 2006, as reflected in communications between Philips and Kodak. Moreover, there was no action by Philips during this period which would lead Kodak to assume that any infringement by Kodak was condoned or approved by Philips. Under the circumstances, Philips did not unreasonably or inexcusably delay in filing of the Complaint. Philips has been actively conducting an enforcement and licensing program regarding the '075 patent and its foreign counterparts during the period from 2000 until the present, which has resulted in a number of license agreements between Philips and other companies that use the patented technology.

Similarly, Philips engaged in bilateral communications with Kodak in an attempt to resolve this dispute without litigation. During that period, Philips has also conducted an investigation concerning the infringement, validity, and enforceability of the Patent-in-Suit and its foreign counterparts in order to determine and establish that a strong basis existed for this lawsuit and other lawsuits filed in other jurisdictions. Moreover, there is no evidence that Kodak has suffered any economic prejudice. Kodak has not shown that it would have acted differently had Philips sued earlier. In fact, Kodak has indicated that it was not concerned about its infringement of the Patent-in-Suit, as reflected by Kodak's actions in willfully continuing its infringing activities in spite of Kodak's receipt of a letter dated October 1, 2002, sent by Jack D. Slobod on behalf of U.S. Philips Corporation. Nor has Kodak shown that it has suffered any evidentiary prejudice. In fact, Kodak indicated in communications with Philips before this suit was filed that Kodak had already obtained evidence concerning alleged prior art as a result of Kodak's involvement in an earlier suit with Forgent Networks concerning a different patent that allegedly also relates to the JPEG Standard for image encoding.

Susumu Tsugaru and Jack Slobod are likely to have knowledge regarding the Philips patent licensing program in Japan and in the United States, respectively. Kenneth Cho, Jack Slobod, and Michael E. Marion are likely to have knowledge regarding communications with Kodak regarding the Patent-in-Suit.

Pursuant to Rule 33(d) of the Federal Rules of Civil Procedure, Philips will produce copies of documents in Philips' possession, custody, or control that are not otherwise protected by privilege exceptions and can be produced without violation of a court order or an agreement, and from which information responsive to this interrogatory may be derived or ascertained, to the extent such documents exist, at a mutually convenient time.

Interrogatory No. 6:

Describe with particularity all facts and circumstances supporting Philips' contention that it is entitled to a permanent injunction against Kodak based on Kodak's alleged infringement of the Patent-in-Suit including any basis of irreparable harm or inadequacy of monetary damages. Please identify all facts, persons, documents, communications and things Philips contends support its response.

Response to Interrogatory No. 6:

Philips incorporates by reference each of the applicable general objections as though fully set forth herein. Subject to and without waiving any of its general and specific objections and reserving its right to supplement its response as discovery proceeds, Philips responds to this interrogatory as follows:

In view of the Scheduling Order that is now in place in this case and the date of expiration of the Patent-in-Suit, Philips will not seek a permanent injunction against Kodak.

Interrogatory No. 7:

For each claim of the Patent-in-Suit which you contend is infringed, separately list each claim term and claim element, and your full and detailed contentions regarding the proper claim construction of such claim term or claim element, including all reasons for such claim construction and all intrinsic and extrinsic evidence relied upon in full or in part for such construction, and, for terms and elements which you contend need not be construed, all reasons why no construction is required. Please identify all facts, persons, documents, communications and things Philips contends support its response.

Response to Interrogatory No. 7:

Philips incorporates by reference each of the applicable general objections as though fully set forth herein. Philips specifically objects to this interrogatory as unduly burdensome and as prematurely seeking the disclosure of claim construction contentions, which are to be exchanged in accordance with a timetable for disclosure that was agreed to by the parties and adopted by the Court in its Scheduling Order. Philips objects to this interrogatory to the extent it seeks information that is protected by the attorney-client privilege or the attorney work product

immunity. Philips objects to this interrogatory as unduly burdensome to the extent it requires Philips to respond in a manner beyond that required by the Federal Rules of Civil Procedure or this Court's Local Rules.

Interrogatory No. 8:

Identify every instance where Philips has licensed the Patent-in-Suit to any entity or asserted the Patent-in-Suit against any entity, including, without limitation, all actual licenses, all offers to license the Patent in Suit, all assertions that any entity has infringed any claim of the Patent-in-Suit, all offers of immunity from suit under any claims of the Patent-in-Suit, including any Related Philips Patents, and identify the following information:

(a) the entity to whom any license or immunity was granted or offered or against which the Patent-in-Suit was asserted;

(b) all products licensed, subject to an offer to license or grant of immunity, or against which the Patent-in-Suit was asserted;

(c) each person for each party which participated in the negotiation of any license or immunity;

(d) separately, for each entity that has provided monies or other consideration for any rights under the Patent-in-Suit or which provided monies or consideration for research or work which led to the Patent-in-Suit or invention claimed therein, list such monies or consideration on a yearly basis from 1982 to the present;

(e) the dates of each license negotiation, license offer, license grant, or assertion of the Patent-in-Suit;

(f) all case information for any actions involving the Patent-in-Suit or Related Philips Patents, including identification of case numbers, courts, parties, and relevant dates.

Please identify all facts, persons, documents, communications and things Philips contends support its response.

Response to Interrogatory No. 8:

Philips incorporates by reference each of the applicable general objections as though fully set forth herein. Philips specifically objects to this interrogatory as overly broad and unduly burdensome to the extent it purports to extend to "any Related Philips Patents." Philips objects to this interrogatory as not relevant to a claim or defense of any party or likely to lead to the discovery of admissible evidence to the extent it extends beyond the subject matter of the Patent-in-Suit. Philips objects to this interrogatory to the extent it seeks information that is protected by the attorney-client privilege or by the attorney work product immunity. Philips further objects to

this interrogatory to the extent it seeks third-party information in Philips' possession, custody, or control that is subject to agreement, court order, or any other duty preventing disclosure to Kodak. Philips objects to this interrogatory as unduly burdensome to the extent it requires Philips to respond in a manner beyond that required by the Federal Rules of Civil Procedure or this Court's Local Rules. Because it consists of multiple parts and sub-parts, Interrogatory No. 8 is improperly listed as a single interrogatory.

Subject to and without waiving any of its general and specific objections and reserving its right to supplement its response as discovery proceeds, Philips responds to this interrogatory as follows:

Pursuant to Rule 33(d) of the Federal Rules of Civil Procedure, Philips will produce copies of documents in Philips' possession, custody, or control that are not otherwise protected by privilege exceptions and can be produced without violation of a court order or agreement, and from which information responsive to this interrogatory may be derived or ascertained, to the extent such documents exist, at a mutually convenient time.

Interrogatory No. 9:

Separately state your full and detailed contentions concerning the (a) the level of ordinary skill in (b) the pertinent art, of the Patent-in-Suit, as of the time the invention claimed in the Patent-in-Suit was made. Please identify all facts, persons, documents, communications and things Philips contends support its response.

Response to Interrogatory No. 9:

Philips incorporates by reference each of the applicable general objections as though fully set forth herein. Philips specifically objects to this interrogatory to the extent it seeks information that is protected by the attorney-client privilege or by the attorney work product immunity. Philips objects to the extent this interrogatory purports to require Philips to make

investigations and legal determinations that it has not previously made. Philips objects to this interrogatory as prematurely calling for expert opinions. Philips objects to this interrogatory as unduly burdensome to the extent it requires Philips to respond in a manner beyond that required by the Federal Rules of Civil Procedure or this Court's Local Rules or Scheduling Order.

Interrogatory No. 10:

Separately for each claim of the Patent-in-Suit, state your full and detailed contentions regarding all secondary considerations (such as commercial success, long-felt need, failure of others, copying by others, unexpected results, discouragement by others, etc.) and objective indicia of nonobviousness of the invention(s) claimed in the Patent-in-Suit. Please identify all facts, persons, documents, communications and things Philips contends support its response.

Response to Interrogatory No. 10:

Philips incorporates by reference each of the applicable general objections as though fully set forth herein. Philips specifically objects to this interrogatory to the extent it seeks information that is protected by the attorney-client privilege or the attorney work product immunity. Philips objects to this interrogatory as unduly burdensome to the extent it requires Philips to respond in a manner beyond that required by the Federal Rules of Civil Procedure or this Court's Local Rules. Philips objects to the extent this interrogatory purports to require Philips to make investigations and legal determinations that it has not previously made. Philips objects to this interrogatory as prematurely calling for expert opinions. Philips will timely respond to this interrogatory when and to the extent Kodak asserts the particulars of a defense based on a specific claim of obviousness. Because it consists of multiple parts and sub-parts, Interrogatory No. 10 is improperly listed as a single interrogatory.

Interrogatory No. 11:

State your full and detailed contentions regarding all damages suffered by Philips, or any compensation owed by Kodak, as a result of Kodak's alleged infringement of the Patent-in-Suit including the basis for any claim for lost profits or reasonable royalty (including basis for royalty

rate and royalty base). Please identify all facts, persons, documents, communications and things Philips contends support its response.

Response to Interrogatory No. 11:

Philips incorporates by reference each of the applicable general objections as though fully set forth herein. Philips specifically objects to this interrogatory to the extent it seeks information that is protected by the attorney-client privilege or by the attorney work product immunity. Philips objects to this interrogatory as premature given that discovery is still in its early stages in this case and Kodak has yet to produce documentation and information including that relating to infringement, sales, and profits. Philips objects to this interrogatory to the extent it seeks third-party information in Philips' possession, custody, or control that is subject to agreement, court order, or any other duty preventing disclosure to Kodak. Philips objects to the extent this interrogatory purports to require Philips to make investigations and legal determinations that it has not previously made. Philips objects to this interrogatory as prematurely calling for expert opinions. Philips objects to this interrogatory as unduly burdensome to the extent it requires Philips to respond in a manner beyond that required by the Federal Rules of Civil Procedure or this Court's Local Rules. Philips objects to this interrogatory to the extent it seeks information duplicative of information sought in other interrogatories, including Interrogatory No. 8.

Subject to and without waiving any of its general and specific objections and reserving its right to supplement its response as discovery proceeds, Philips responds to Interrogatory No. 11 as follows:

As presently advised, Philips contends that the Kodak products and services identified in Philips' answer to Kodak's Interrogatory No. 1 infringe at least those claims cited therein.

Philips will seek damages beginning in 2000 adequate to compensate it for Kodak's direct and indirect infringement of the Patent-in-Suit, but in no event less than a reasonable royalty, together with interest and costs. Any reasonable royalty rate that may be determined (e.g., by the factors listed in *Georgia-Pacific Corp. v. United States Plywood Corp.*, 318 F. Supp. 1116, 1120 (S.D.N.Y. 1970), by the "analytical approach" expressed in *TVM Mfg. Co. v. Dura Corp.*, 789 F.2d 895 (Fed. Cir. 1986), by the "rule of thumb analysis," and by the "specific cost savings" analysis) will be multiplied by the amount or value of infringing products and services sold or licensed by Kodak, as well as by the amount or value of products and services tied, convoyed, or otherwise collateral to the infringing products and services sold and/or licensed by Kodak, and added to any lump sum royalties determined.

Philips will also seek pre-judgment and post-judgment interest on the damages described above, as well as treble damages due to Kodak's willful infringement.

Interrogatory No. 12:

State your full and detailed contentions regarding the patent and patent application disclosure obligations of members or participants of the standards setting organizations involved in development and approval of the JPEG Standard including without limitation ISO Working Groups 8 and 10, CCITT Study Group VIII, and British Standards Institution ("BSI") IST/37, and any excuses, reasons or facts that Philips contend justify its failure to disclose the Patent-in-Suit, Related Philips Patents or Related Philips Patent Applications to those standards setting organizations both during development and after adoption of the JPEG Standard. Please identify all facts, persons, documents, communications and things Philips contends support its response.

Response to Interrogatory No. 12:

Philips incorporates by reference each of the applicable general objections as though fully set forth herein. Philips specifically objects to this interrogatory as vague and incomprehensible to the extent it seeks Philips' "contentions regarding the patent and patent application disclosure obligations of members or participants of the standards setting organizations." Philips objects to

the definition of "JPEG Standard" as vague and overly broad as it purports to extend to "all national standards body versions, equivalents, or variations of the ISO standard or the CCITT standard." Philips objects to the extent this interrogatory purports to require Philips to make contentions, investigations and legal determinations that it has not previously made. Philips objects to this interrogatory as prematurely calling for expert opinions. Philips objects to this interrogatory as unduly burdensome to the extent that it seeks information that can be independently obtained by Kodak from other sources. Philips objects to this interrogatory as overly broad and unduly burdensome to the extent it purports to extend to "Related Philips Patents or Related Philips Patent Applications." Philips objects to this interrogatory as not relevant to a claim or defense of any party or likely to lead to the discovery of admissible evidence to the extent it extends beyond the subject matter or territorial reach of the Patent-in-Suit. Philips objects to this interrogatory to the extent it seeks information that is protected by the attorney-client privilege or the attorney work product immunity. Philips objects to this interrogatory as unduly burdensome to the extent it requires Philips to respond in a manner beyond that required by the Federal Rules of Civil Procedure or this Court's Local Rules.

Subject to and without waiving any of its general and specific objections and reserving its right to supplement its response as discovery proceeds, Philips responds to this interrogatory as follows:

As presently advised, Philips has not been accused by any U.S.-based or other standards setting organization of violating that organization's disclosure obligations in connection with the Patent-in-Suit. By this statement, Philips does not affirm or suggest that Philips is or was a member or participant of any standards setting organization.

In addition, pursuant to Rule 33(d) of the Federal Rules of Civil Procedure, Philips will produce copies of documents in Philips' possession, custody, or control that are not otherwise protected by privilege exceptions and can be produced without violation of a court order or an agreement, and from which information responsive to this interrogatory may be derived or ascertained, to the extent such documents exist, at a mutually convenient time.

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Dated: April 6, 2007

Attachment A

Trial Counsel Eyes Only (pursuant to Local Rule 26.2)

U.S. Patent No. 4,901,075	ISO/IEC 10918-1
3. In a method of coding a signal comprising a sequence of coefficients which results after a blockwise transform of pixels of a video signal with subsequent quantization, for transmission at a reduced bit rate, said signal comprising a plurality of zero coefficients, and a plurality of non-zero coefficients said method comprising the steps of:	When coding a signal, a sequence of DCT coefficients including DC coefficient and AC coefficients results after a blockwise transform of pixels of a video signal with subsequent quantization, using a quantization table, for transmission at a reduced bit rate. The signal comprises a plurality of zero coefficients, and a plurality of non-zero coefficients, as the coefficients are encoded in the order in which they occur in zig-zag sequence order, starting with the DC coefficient. See, e.g., Sec. 4.3 & Annex F, Sec. F.1.1.2, F.1.1.5 and F.1.1.5.2.
(a) deriving from said signal, a plurality of events each comprising a run of said zero-coefficients having a respective run length and preceded or followed by at least one non-zero coefficient, and	Events are derived from the signal, each comprising zero or more zero coefficients and the subsequent non-zero coefficient. For example, the sequence of coefficients 400500005000001 is grouped into events as (4)(005)(00005)(000001). See, e.g., Annex F, Sec. F.1.2.2.1.
(b) for each of said events, determining said respective run length and assigning a code word to represent said non-zero coefficient and said run length.	For each event, the run length is determined, and the event is described by an assigned code word that represents non-zero coefficent and the run length. See, e.g., Annex F, Sec. F.1.2.2.1.
4. The method of claim 3, wherein said code words are Huffman code words.	The code words are Huffman code words. See, e.g., Annex F, Sec. F.1.2.2.1.
7. A method as claimed in claim 4, characterized in that the Huffman codeword is independent of the sign of that non-zero coefficient which succeeds or precedes the run of zero-coefficients and in that the sign is coded by a separate bit.	The Huffman codeword is independent of the sign of the non-zero coefficient which succeeds or precedes the run of zero-coefficients and the sign is coded by a separate bit. See, e.g., Annex F, Sec. F.1.2.2.1.

Trial Counsel Eyes Only (pursuant to Local Rule 26.2)

U.S. Patent No. 4,901,075	ISO/IEC 10918-1
8. A method for coding a signal for transmission at a reduced bandwidth, comprising the steps of:	A signal can be coded for transmission at a reduced bandwidth. See, e.g., Sec. 4.3 & Annex F, Sec. F.1.1.2, F.1.1.5 and F.1.1.5.2.
(a) transforming said signal into a sequence comprising zero coefficients occurring in runs and non-zero coefficients;	The signal is transformed into a sequence of DCT coefficients including DC coefficient and AC coefficients. The signal comprises a plurality of zero coefficients, and a plurality of non-zero coefficients, as the coefficients are encoded in the order in which they occur in zig-zag sequence order, starting with the DC coefficient. See, e.g., Sec. 4.3 & Annex F, Sec. F.1.1.2, F.1.1.5 and F.1.1.5.2.
(b) deriving from said sequence, a plurality of events each comprised of a run of zero coefficients having a respective run length, which is preceded or followed by at least one non-zero coefficient, and	Events are derived from the signal, each comprising zero or more zero coefficients and the subsequent non-zero coefficient. For example, the sequence of coefficients 400500005000001 is grouped into events as (4)(005)(00005)(000001). See, e.g., Annex F, Sec. F.1.2.2.1.
(c) for each of said events, determining the run length and assigning a code word to represent said run length and said non-zero coefficient.	For each event, the run length is determined, and the event is described by an assigned code word that represents non-zero coefficent and the run length. See, e.g., Annex F, Sec. F.1.2.2.1.
11. The method of claim 8, comprising the additional steps of: determining whether the run length of each event exceeds a predetermined run length and if so, splitting said respective event into a plurality of sections so that each of said sections has a run length below said predetermined run length, and assigning a code word to each section.	If the run length exceeds a predetermined run length, the event is split into sections. Each section has a run length below the predetermined run length, and an assigned code word. See, e.g., Annex F, Sec. F.1.2.2.1.

Trial Counsel Eyes Only (pursuant to Local Rule 26.2)

CERTIFICATE OF SERVICE

I hereby certify that on the 6th day of April, 2007, the attached **PLAINTIFF U.S. PHILIPS CORPORATION'S OBJECTIONS AND RESPONSES TO DEFENDANT EASTMAN KODAK COMPANY'S FIRST SET OF INTERROGATORIES TO PLAINTIFF U.S. PHILIPS CORPORATION (NOS. 1-12)** was served upon the below-named counsel of record at the addresses and in the manner indicated:

Francis DiGiovanni, Esquire — HAND DELIVERY
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Steven J. Balick

EXHIBIT 4

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE

U.S. PHILIPS CORPORATION,	)	
	)	
Plaintiff,	)	
	)	Civil Action No. 06-251 (GMS)
v.	)	
	)	
EASTMAN KODAK COMPANY,	)	
	)	
Defendant.	)	

PHILIPS' FIRST SET OF INTERROGATORIES (Nos. 1-13)

Pursuant to Rule 33 of the Federal Rules of Civil Procedure, Plaintiff U.S. Philips Corporation ("Philips") hereby serves this First Set of Interrogatories to Defendant Eastman Kodak Company ("Kodak"), and requests that they be answered within thirty (30) days of service.

DEFINITIONS

1. "YOU" and "YOUR" mean and refer to Defendant Kodak and its directors, officers, agents, employees, attorneys, partners, affiliates, parents, subsidiaries, successors, assigns, and other representatives or persons acting or purporting to act on its behalf, or within its control, and any person in active concert or participation with it, or through whom or through which it conducts business.

2. "Time Period" means April 18, 2000, through the present time.

3. "JPEG" means the Joint Photographic Experts Group.

4. "JPEG Standard" means and refers to the international technical standard, CCITT Recommendation T.8 1, entitled "Terminal Equipment and Protocols for Telematic Services: Information Technology-Digital Compression

and Coding of Continuous-Tone Still Images-Requirements and Guidelines," prepared by the CCITT Study Group VIII and the Joint Photographic Experts Group (JPEG) of ISO/IEC JTC 1/SC 29/WG 10.

5. "JPEG image encoding products or services" means and refers to image encoding hardware and software products or services that follow specific procedures for the encoding of images that are set forth in the JPEG Standard.

6. "Document" is defined to be synonymous in meaning and equal in scope to the usage of this term in Federal Rule of Civil Procedure 34(a), including, without limitation, electronic or computerized data compilations. A draft or non-identical copy is a separate document within the meaning of this term. Any translation of a requested document shall be deemed a separate document.

7. "Thing" has the broadest meaning accorded that term by Federal Rule of Civil Procedure 34, and includes every kind of physical specimen or tangible item, other than a document, in YOUR possession, custody, or control.

8. A request for a "document" shall be deemed to include a request for a "thing." A request for a "thing" shall be deemed to include a request for a "document."

9. "Person" and "persons" mean any natural individual(s) in any capacity whatsoever or any entity or organization, including divisions, subsidiaries, departments, and other units therein, and shall include, but not be limited to, a public or private corporation, partnership, joint venture, voluntary or unincorporated association, organization, proprietorship, trust, estate, governmental agency, commission, bureau, or department.

10. "Individual" means a natural person.

11. "Communication" means all written, electronic, oral, telephonic, or other inquiries, dialogues, discussions, conversations, interviews, correspondence, consultations, negotiations, agreements, understandings, meetings, letters, notes,

telegrams, advertisements, facsimiles, mail, e-mail, and all other documents or things evidencing any verbal or nonverbal interaction between persons or entities.

12. The connectives "or" and "and" shall be construed either disjunctively or conjunctively as necessary to bring within the scope of the discovery request all responses that might otherwise be construed to be outside of its scope; "or" includes "and/or."

13. The use of a verb in any tense shall be construed as including the use of the verb in all other tenses.

14. The singular form of any word shall be deemed to include the plural. The plural form of any word shall be deemed to include the singular.

15. The words "all" and "each" shall be construed as all and each.

16. The word "any" means one or more, and includes "any and all."

17. The word "including" means including but not limited to.

18. The terms "relating to" and "concern" and all variations thereof mean: relating to, referring to, pertaining to, regarding, concerning, identifying, containing, reflecting, describing, discussing, evidencing, embodying, constituting or showing, or in any way logically or factually connected with the matter discussed or identified.

19. The terms "identify" or "identity" when used in connection with a person, mean to give, to the extent known, the person's full name, present or last known address, and when referring to a natural person, additionally the present or last known place of employment.

20. The terms "identify" or "identity" when used in connection with an oral statement mean: state the name of the speaker; the date of the statement; the place at which the statement was made; the person or persons to whom the statement was addressed, if practicable, and otherwise a general description of the persons to whom the statement was addressed; the subject matter of the statement;

and if the statement was memorialized in writing or mechanical or other recording, state the date and present location of said writing or mechanical or other recording.

21. The terms "identify" or "identity" when used in connection with a document mean: state the name of the author, the type of document or writing, the date, the addressee, or recipient, if practicable, and otherwise a general description of the persons to whom the writing was distributed, the subject matter, and the present location. In lieu of such identification, YOU may attach a copy of the writing containing said written description and refer thereto in YOUR answer.

22. "The '075 Patent" refers to U.S. Patent No. 4,901,075.

23. The term "Patent-In-Suit" refers to the '075 patent.

24. The terms "Customer" or "Customers" mean a person or persons including but not limited to customers, distributors, related or affiliated entities, agents, consignees, storage or warehouse services, freight forwarders, transportation or shipping companies.

INSTRUCTIONS

1. Where knowledge or information in YOUR possession is requested, the request extends to knowledge or information in the possession of YOUR agents, representatives, and, unless privileged, attorneys. Whenever an answer to these interrogatories contains information that is not based upon YOUR personal knowledge, state the source and the nature of such information.

2. If YOU contend that the answer to any interrogatory is privileged in whole or in part, state all facts supporting such privilege, and identify each person having knowledge of the factual basis on which the privilege is asserted.

3. These interrogatories shall be considered continuing, and YOU are to supplement YOUR answers in a timely manner in accordance with the requirements of Rule 26 of the Federal Rules of Civil Procedure.

INTERROGATORIES

Interrogatory No. 1

Identify each and every one of YOUR JPEG image encoding products and services, including an identification of all product names, labels, model numbers, and identifications used to identify each particular product; identify each person who has knowledge about the subject matter of this interrogatory; and identify each document and thing relating to the subject matter of this interrogatory.

Interrogatory No. 2

For every claim of the patent-in-suit that YOU allege is invalid or unenforceable, and separately for each claim so identified, state each fact known by YOU that supports, refutes, or relates to YOUR allegations of invalidity and unenforceability; identify each person who has knowledge about the subject matter of this interrogatory; and identify each document and thing relating to the subject matter of this interrogatory.

Interrogatory No. 3

For every claim of the patent-in-suit that YOU allege is invalid over prior art under 35 U.S.C. §§ 102 or 103, describe in a claim chart, separately for each claim so identified, how each and every claim limitation is disclosed or suggested by specific teachings in identified items of prior art; identify each person who has knowledge about the subject matter of this interrogatory; and identify each document and thing relating to the subject matter of this interrogatory.

Interrogatory No. 4

Separately for each JPEG image encoding product or service identified in YOUR response to Interrogatory No. 1, identify each person who is knowledgeable about the design, development, structure, configuration, functioning, or use of the product or service; and identify all documents and things that refer or relate to the

design, development, structure, configuration, functioning, or use of the product or service.

Interrogatory No. 5

For every claim of the patent-in-suit that YOU deny is infringed, and separately for each JPEG image encoding product or service identified in YOUR response to Interrogatory No. 1, state each fact known by YOU that supports, refutes, or relates to YOUR allegations of noninfringement, including a claim chart which specifically identifies every claim limitation which is not present, either literally or by equivalents, in each of these products or services; identify each person who has knowledge about the subject matter of this interrogatory; and identify each document and thing relating to the subject matter of this interrogatory.

Interrogatory No. 6

State each fact known by YOU that supports, refutes, or relates to YOUR allegation that YOU have not willfully infringed the patent-in-suit, including any attempts to design around the patent-in-suit and the identity of any opinions or analyses of counsel; identify each person who has knowledge about the subject matter of this interrogatory; and identify each document and thing relating to the subject matter of this interrogatory.

Interrogatory No. 7

If YOU contend that any of the JPEG image encoding products or services identified in YOUR response to Interrogatory No. 1 were licensed, impliedly or otherwise, under the patent-in-suit, state each fact known by YOU that supports, refutes, or relates to YOUR contention, including the particular products or services that were allegedly licensed, the number of products or services that were allegedly licensed, the particular patents or patent pools that were allegedly licensed, the particular agreements that allegedly licensed those products or

services, the specific parties to any such license or patent pool agreements, identify each person who has knowledge about the subject matter of this interrogatory; and identify each document and thing relating to the subject matter of this interrogatory.

Interrogatory No. 8

Describe in detail all facts that support, refute, or relate to YOUR assertions that this action is barred by laches, equitable estoppel, patent exhaustion, license, release, waiver/estoppel, and/or unclean hands; identify each person who has knowledge about the subject matter of this interrogatory; and identify each document and thing relating to the subject matter of this interrogatory.

Interrogatory No. 9

Describe in detail all facts that support, refute, or relate to YOUR assertions that Philips engaged in deceptive trade practices in violation of 6 Del. C. § 2532, committed fraud, and/or made a negligent misrepresentation; identify each person who has knowledge about the subject matter of this interrogatory; and identify each document and thing relating to the subject matter of this interrogatory.

Interrogatory No. 10

Separately for each JPEG image encoding product or service identified in YOUR response to Interrogatory No. 1, identify each and every manufacturer or developer of the product or service for each month from April 18, 2000, including an identification of all business names and addresses of the manufacturer or developer; state the total quantity of the product or service that was provided to YOU or YOUR customers from each manufacturer or developer; identify each person who has knowledge about the subject matter of this interrogatory; and identify each document and thing relating to the subject matter of this interrogatory.

Interrogatory No. 11

Separately for each JPEG image encoding product or service identified in YOUR response to Interrogatory No. 1, identify any and all image encoding specifications and standards that were to be met by the products or services, indicate whether the products or services met those image encoding specifications and standards, and indicate how it is determined whether the products or services met those image encoding specifications and standards; identify each person who has knowledge about the subject matter of this interrogatory; and identify each document and thing relating to the subject matter of this interrogatory.

Interrogatory No. 12

Separately for each JPEG image encoding product or service identified in YOUR response to Interrogatory No. 1, and separately for each month from April 18, 2000, until the date of the response to this Interrogatory, state the total quantity of JPEG image encoding products or services that has been made, sold, offered for sale, imported into the United States, used, leased, distributed, and/or licensed by or for YOU or YOUR customers; identify each person who has knowledge about the subject matter of this interrogatory; and identify each document and thing relating to the subject matter of this interrogatory.

Interrogatory No. 13

Separately for each JPEG image encoding product or service identified in YOUR response to Interrogatory No. 1, and separately for each month from April 18, 2000, until the date of the response to this Interrogatory, state YOUR revenues, profits, and costs for each product or service that has been made, sold, offered for sale, imported into the United States, used, leased, distributed, and/or licensed by or for YOU or YOUR customers; identify each person who has knowledge about the subject matter of this interrogatory; and identify each document and thing relating to the subject matter of this interrogatory.

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Dated: February 2, 2007
177424.1

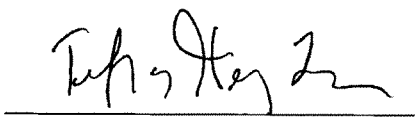
CERTIFICATE OF SERVICE

I hereby certify that on the 2nd day of February, 2007, the attached **PHILIPS' FIRST SET OF INTERROGATORIES (Nos. 1-13)** was served upon the below-named counsel of record at the addresses and in the manner indicated:

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East Palo Alto, CA 94303



Tiffany Geyer Lydon

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE

U.S. PHILIPS CORPORATION, Plaintiff, v. EASTMAN KODAK COMPANY, Defendant.	)	C.A. No. 06-251-GMS

NOTICE OF SERVICE

The undersigned hereby certifies that on the 2nd day of February, 2007, **PHILIPS' FIRST SET OF INTERROGATORIES (Nos. 1-13)** were served upon the following counsel of record at the address and in the manner indicated:

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/s/ Tiffany Geyer Lydon

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Dated: February 2, 2007
172473.1

CERTIFICATE OF SERVICE

I hereby certify that on the 2nd day of February, 2007, the attached **NOTICE OF SERVICE** was served upon the below-named counsel of record at the addresses and in the manner indicated:

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East Palo Alto, CA 94303

VIA ELECTRONIC MAIL

/s/ Tiffany Geyer Lydon

Tiffany Geyer Lydon

EXHIBIT 5

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE

U.S. PHILIPS CORPORATION, Plaintiff, v. EASTMAN KODAK COMPANY, Defendant.	)	Civil Action No. 06-00251-GMS

DEFENDANT EASTMAN KODAK COMPANY'S RESPONSES TO PLAINTIFF U.S. PHILIPS CORPORATION'S FIRST SET OF INTERROGATORIES (Nos. 1-13)

Pursuant to Rule 33 of the Federal Rules of Civil Procedure, Defendant Eastman Kodak Company ("Kodak") responds to the First Set of Interrogatories ("Interrogatories") (Nos. 1-13) propounded by Plaintiff U.S. Philips Corporation ("Philips") as follows:

PRELIMINARY STATEMENTS

1. Kodak's responses to Philips' Interrogatories are made to the best of Kodak's present knowledge, information and belief. Kodak reserves the right to supplement and amend these responses should future investigation indicate that such supplementation or amendment is necessary. Kodak's responses should in no way be considered prejudicial in relation to further discovery, research, analysis or production of evidence.

2. Kodak's responses are made solely for the purpose of and in relation to this action. Each response is given subject to all appropriate objections including, but not limited to, objections concerning privilege, competency, relevancy, materiality, propriety and admissibility. All objections are reserved and may be interposed at any time.

3. Until the Court enters a protective order in this case, Kodak will not provide Philips with any Kodak or third-party confidential, trade secret, or proprietary business, technical, marketing or financial information.

4. Kodak incorporates by reference each and every general objection set forth below into each and every specific response. From time to time a specific response may repeat a general objection for emphasis or some other reason. The failure to include any general objection in any specific response shall not be interpreted as a waiver of any general objection to that response.

5. By responding to Philips' Interrogatories, Kodak does not waive any objection that may be applicable to: (a) the use, for any purpose, by Philips of any information or documents given in this response to Philips' Interrogatories; or (b) the admissibility, relevancy or materiality of any of the information or documents at issue in this case.

GENERAL OBJECTIONS

1. Kodak objects to each and every Interrogatory, and to Philips' instructions and definitions, to the extent that they purport to impose additional burdens or duties on Kodak that exceed the scope of reasonable and permissible discovery under the Federal Rules of Civil Procedure, the Local Civil Rules for the District of Delaware, or the Individual Rules of the Judge(s) hearing this matter.

2. Kodak objects to each and every Interrogatory to the extent they seek information protected by attorney-client privilege, the work product immunity doctrine, or any other applicable law, protection or doctrine. The production of any privileged information or document by Kodak is unintentional, and Kodak does not intend to waive any applicable objection or privilege as a result of such production or disclosure.

3. Kodak objects to each and every Interrogatory to the extent it is overly broad or unduly burdensome or oppressive, particularly when the Interrogatory is unduly burdensome in view of Kodak's cost necessary to investigate weighed against Philips' need for the information.

4. Kodak objects to each and every Interrogatory to the extent it requires Kodak to make a legal conclusion and/or render an expert opinion.

5. Kodak objects to each and every Interrogatory as overly broad and unduly burdensome to the extent it is unlimited in temporal scope or otherwise not limited to a time frame that is relevant to this litigation and the patent in suit. Pursuant to 35 U.S.C. § 286, Philips is not entitled to recover for any infringement that allegedly occurred more than six years prior to the filing of the original Complaint on April 18, 2006. Kodak limits its interrogatory responses to the time period set forth in the specific responses and objections.

6. Kodak objects to each and every Interrogatory to the extent it seeks information already in Philips' possession or available in the public domain. Such information is as readily available to Philips as it is to Kodak.

7. Kodak objects to each and every Interrogatory to the extent it seeks information that is not in the possession, custody, or control of Kodak.

8. Kodak objects to each and every Interrogatory to the extent it seeks information that Kodak is not permitted to disclose pursuant to confidentiality obligations or agreements with third parties.

9. Kodak objects to each and every Interrogatory to the extent it seeks confidential, trade secret, or proprietary business, technical, marketing, or financial information. As noted above in Kodak's Preliminary Statements, Kodak will not provide such information until a suitable protective order has been entered by the Court.

10. Kodak objects to each and every Interrogatory to the extent it seeks information that is neither relevant to the issues in the lawsuit nor is reasonably calculated to lead to the discovery of admissible evidence.

11. Kodak objects to Philips' Definition No. 1 ("you" and "your") as overly broad and unduly burdensome to the extent it requests Kodak to produce documents maintained by other companies or entities. Kodak will produce only those documents in its possession, custody, or control.

12. Kodak objects to Philips' Instruction No. 2 as overly broad in time. Except as set forth below, Kodak will not separately identify the document, communication or item for which it claims privilege. Rather, Kodak will identify its privileged documents in the form of a privilege log. However, Kodak will not disclose, produce or include on a privilege log any documents or things created or dated after the filing of Philips' original Complaint on April 18, 2006.

SPECIFIC OBJECTIONS

INTERROGATORY NO. 1:

Identify each and every one of YOUR JPEG image encoding products and services, including an identification of all product names, labels, model numbers, and identifications used to identify each particular product; identify each person who has knowledge about the subject matter of this interrogatory; and identify each document and thing relating to the subject matter of this interrogatory.

RESPONSE TO INTERROGATORY NO. 1:

Kodak objects to this Interrogatory as vague and ambiguous, including without limitation, the use of the phrase "JPEG image encoding products and services." Kodak further objects to this Interrogatory as being compound because it contains discrete subparts that require separate, distinct and multiple responses. Kodak objects to this Interrogatory as overly broad as to time and/or scope and unduly burdensome. Kodak will respond to this Interrogatory applying the relevant Time Period as defined by Philips' First Set of Interrogatories. Kodak further objects to this Interrogatory to the extent it seeks to elicit information subject to and protected by the

attorney-client privilege, the attorney work product doctrine and/or any other applicable privileges, protections, or immunities. Kodak further objects to this Interrogatory to the extent it seeks information that is beyond Kodak's possession, custody or control. Subject to the foregoing general and specific objections, Kodak responds to this Interrogatory as follows:

Subject to additional and ongoing investigation, the following products and services, depending on their design, construction or particular use, might either implement or utilize the baseline sequential mode of the JPEG standard, ISO/IEC 10918-1, for the encoding of images:

Product Category	Product
Consumer Digital Camera	C300
Consumer Digital Camera	C310
Consumer Digital Camera	C315
Consumer Digital Camera	C330
Consumer Digital Camera	C340
Consumer Digital Camera	C360
Consumer Digital Camera	C530
Consumer Digital Camera	C433
Consumer Digital Camera	C503
Consumer Digital Camera	C533
Consumer Digital Camera	C603
Consumer Digital Camera	C623
Consumer Digital Camera	C633
Consumer Digital Camera	C643
Consumer Digital Camera	C653
Consumer Digital Camera	C663
Consumer Digital Camera	C703
Consumer Digital Camera	C743
Consumer Digital Camera	C763
Consumer Digital Camera	C875
Consumer Digital Camera	CD33
Consumer Digital Camera	CD40
Consumer Digital Camera	CD43
Consumer Digital Camera	CD50
Consumer Digital Camera	CW330

Product Category	Product
Consumer Digital Camera	CX4200
Consumer Digital Camera	CX4210
Consumer Digital Camera	CX4230
Consumer Digital Camera	CX4300
Consumer Digital Camera	CX4310
Consumer Digital Camera	CX6200
Consumer Digital Camera	CX6230
Consumer Digital Camera	CX6330
Consumer Digital Camera	CX6445
Consumer Digital Camera	CX7220
Consumer Digital Camera	CX7300
Consumer Digital Camera	CX7310
Consumer Digital Camera	CX7330
Consumer Digital Camera	CX7430
Consumer Digital Camera	CX7525
Consumer Digital Camera	CX7530
Consumer Digital Camera	DC200
Consumer Digital Camera	DC200 Plus
Consumer Digital Camera	DC210
Consumer Digital Camera	DC210 Plus
Consumer Digital Camera	DC210a
Consumer Digital Camera	DC215
Consumer Digital Camera	DC215 Millennium
Consumer Digital Camera	DC220
Consumer Digital Camera	DC240
Consumer Digital Camera	DC240I
Consumer Digital Camera	DC260
Consumer Digital Camera	DC265
Consumer Digital Camera	DC280
Consumer Digital Camera	DC280J
Consumer Digital Camera	DC290
Consumer Digital Camera	DC3200
Consumer Digital Camera	DC3400
Consumer Digital Camera	DC3800
Consumer Digital Camera	DC4800
Consumer Digital Camera	DC5000
Consumer Digital Camera	DX3215

Product Category	Product
Consumer Digital Camera	DX3500
Consumer Digital Camera	DX3600
Consumer Digital Camera	DX3700
Consumer Digital Camera	DX3900
Consumer Digital Camera	DX4330
Consumer Digital Camera	DX4530
Consumer Digital Camera	DX4900
Consumer Digital Camera	DX6340
Consumer Digital Camera	DX6440
Consumer Digital Camera	DX6490
Consumer Digital Camera	DX7440
Consumer Digital Camera	DX7590
Consumer Digital Camera	DX7630
Consumer Digital Camera	EasyShare One
Consumer Digital Camera	EZ200
Consumer Digital Camera	LS420
Consumer Digital Camera	LS443
Consumer Digital Camera	LS633
Consumer Digital Camera	LS743
Consumer Digital Camera	LS753
Consumer Digital Camera	LS755
Consumer Digital Camera	MC3 Portable Multi-Media Device
Consumer Digital Camera	P712
Consumer Digital Camera	P850
Consumer Digital Camera	P880
Consumer Digital Camera	PalmPix Palm III
Consumer Digital Camera	PalmPix Palm m100
Consumer Digital Camera	PalmPix Palm m500
Consumer Digital Camera	V705
Consumer Digital Camera	V530
Consumer Digital Camera	V550
Consumer Digital Camera	V570
Consumer Digital Camera	V603
Consumer Digital Camera	V610
Consumer Digital Camera	V803
Consumer Digital Camera	V1003

Product Category	Product
Consumer Digital Camera	Z612
Consumer Digital Camera	Z650
Consumer Digital Camera	Z700
Consumer Digital Camera	Z710
Consumer Digital Camera	Z712 IS
Consumer Digital Camera	Z730
Consumer Digital Camera	Z740
Consumer Digital Camera	Z7590
Consumer Digital Camera	Z760
Consumer Digital Camera	Z885
Consumer Digital Camera	Picture Easy Software
Consumer Digital Camera	Picture Postcard Software
Consumer Digital Camera	Picture Postcard Viewer Software
Consumer Digital Camera	Picture Transfer Application
Consumer Digital Camera	EasyShare Software – Macintosh
Consumer Digital Camera	EasyShare Software – Windows
Consumer Digital Camera	Kodak PalmPix Software
Consumer Digital Camera	Kodak Picture Page Software
Consumer Digital Camera	Kodak Picture Share Software
Picture CD	Kodak Picture Software
Picture CD	Kodak Pictures Now Software
Picture CD	Picture CD
Picture CD	Picture CD 7.0
Picture CD	Picture CD EasyShare Software
Picture CD	Picture Disk
Picture CD	Picture Disk Plus
Picture CD	Smart Picture Frame (Networked)
Picture CD	Smart Picture Frame (Non-networked)
Picture CD	Storybox System
Kodak Professional	220 VR CAM SYSTEM
Kodak Professional	260 VR CAM SYSTEM

Product Category	Product
Kodak Professional	265 VR CAM SYSTEM
Kodak Professional	7197940 DCS 520 W/O MEMORY CARD
Kodak Professional	Capture Studio
Kodak Professional	COMML DCS 220
Kodak Professional	COMML DCS 260
Kodak Professional	DCS 315 (KODAK)
Kodak Professional	DCS 330 (KODAK)
Kodak Professional	DCS 520 (KODAK)
Kodak Professional	DCS 520 BASE CAMERA
Kodak Professional	DCS 620 BASE CAMERA
Kodak Professional	DCS 620 KODAK
Kodak Professional	DCS 620X (KODAK)
Kodak Professional	DCS Acquire Module
Kodak Professional	DCS Camera manager
Kodak Professional	DCS File Format Module
Kodak Professional	DCS Photo desk
Kodak Professional	DCS PRO 14C
Kodak Professional	DCS PRO 14N
Kodak Professional	DCS PRO 14N 512MB DIGITAL CAMERA
Kodak Professional	DCS PRO 14NX
Kodak Professional	DCS PRO SLR/C
Kodak Professional	DCS PRO SLR/N
Kodak Professional	DCS Twain Module
Kodak Professional	DP2 Digital Print Production Software Version 6.1
Kodak Professional	HR SCANNING SW
Kodak Professional	KODAK PROF DCS 720X DIGITAL CAMERA
Kodak Professional	KODAK PROF DCS PROBACK 645C
Kodak Professional	KODAK PROF DCS PROBACK 645H
Kodak Professional	KODAK PROF DCS PROBACK 645M
Kodak Professional	KODAK PROF DCS PROBACK PLUS

Product Category	Product
Kodak Professional	KODAK PROF DCS760M MONOCHROME
Kodak Professional	KPLIS Lab Interface Software
Kodak Professional	KPRO DCS 760E DIGITAL CAMERA
Kodak Professional	PROFESSIONAL DCS PRO BACK
Kodak Professional	ProShots Basic Software
Kodak Professional	ProShots Groups Software
Kodak Professional	Proshots On Line Service Software
Kodak Professional	PROSHOTS Studio Software
Document Imaging	3590c
Document Imaging	3590DP
Document Imaging	4500
Document Imaging	4500DP
Document Imaging	Digital Science Intelligent Microimage Scanner
Document Imaging	i30
Document Imaging	i40
Document Imaging	i150
Document Imaging	i160
Document Imaging	i250
Document Imaging	i260
Document Imaging	i280
Document Imaging	i610
Document Imaging	i620
Document Imaging	i640
Document Imaging	i660
Document Imaging	i7300
Document Imaging	i7300 software
Document Imaging	i810
Document Imaging	i820
Document Imaging	i830
Document Imaging	i840
Document Imaging	Kodak Capture Software
Health Imaging Molecular Imaging Systems	EDAS290 System

Product Category	Product
Health Imaging Molecular Imaging Systems	FIS265 System
Health Imaging Molecular Imaging Systems	ID Molecular Imaging Software
Health Imaging PACS	Archive Manager_v3.5.x
Health Imaging PACS	AutoRad-NT_DX_v4.0_v4.1
Health Imaging PACS	AutoRad-Mac_CX_v3.x
Health Imaging PACS	AutoRad-Mac_DX_v3.x
Health Imaging PACS	AutoRad-NT_CX_v4.0_v4.1
Health Imaging PACS	AutoRad-NT_PX_v4.0_v4.1
Health Imaging PACS	ClinicalAccess Display_v3.0_v4.x
Health Imaging PACS	ClinicalAccess Server_v3.0_v4.x
Health Imaging PACS	D1COM Router_v4.0_4.1
Health Imaging PACS	DICOM Router_v4.2.x_4.3.x
Health Imaging PACS	DICOM Router-Mac_v3.x
Health Imaging PACS	DICOM Server_v4.0_v4.1
Health Imaging PACS	DICOM Server-Mac_v3.x
Health Imaging PACS	DirectView ArchiveServer_v4.x
Health Imaging PACS	DirectView AX_CX_DX_v4.2.x_4.3.x
Health Imaging PACS	DirectView DICOM Enable Pkg_v4.x
Health Imaging PACS	DirectView DICOM Server v4.2.x 4.3.x
Health Imaging PACS	Directview TR Client v4.2
Health Imaging PACS	Directview TR Server v4.2
Health Imaging PACS	Directview Workflow Router v4.x
Health Imaging PACS	Directview Workgroup Server v4.x
Health Imaging PACS	DM1 Basic Viewer v.2.5 v.2.6 v.2.7 v.2.8
Health Imaging PACS	Film Digitizer PACS - Mitra
Health Imaging PACS	HIS-RIS Gateway-PACS Broker v. 1.5
Health Imaging PACS	MultiComServer Mac_v3.0_v3.1_v3.2

Product Category	Product
Health Imaging PACS	PACS System 5.1
Health Imaging PACS	PACS System 5.1.1
Health Imaging PACS	PACS System 5.2
Health Imaging PACS	StudyServer v4.0 v4.1
Health Imaging PACS	StudyServerMac v3.x
Health Imaging PACS	TeleMax DVI Macintosh_v2.0_v3.0
Health Imaging PACS	TeleMax Macintosh Client_v2.0_v 3.0
Health Imaging PACS	TeleMax Teleradiology Server Mac_v3.x
Health Imaging PACS	TeleMax Windows Client_v2.x_v3.x.
Health Imaging PACS	VIParchieve (LITMSa or EIM)
Health Imaging PACS	WebAccess Client v.2.0 2.1
Health Imaging PACS	WebAccess Server v.2.0 2.1
Heath Imaging PACS	Image Com Macintosh_v2.0_v.3.0 _3.1 _v3.2
Image Sensor	Kodak KAC 9702 Chip
Retail Solutions - Central Lab Components - I-LABS	Image Data Manager
Retail Solutions - Central Lab Components Kiosks	Kiosks
Retail Solutions - Central Lab Components Digital Mini Labs	DLS Software
Kodak Entertainment Imaging	Kodak Look Manager System V2.0 (KLMS)

In addition, Kodak refers Philips to the individuals identified in Kodak's initial disclosures and Kodak's document production. Kodak's investigation into this Interrogatory is ongoing. Kodak will supplement and/or amend this response as circumstances and its ongoing investigation warrant.

INTERROGATORY NO. 2:

For every claim of the patent-in-suit that YOU allege is invalid or unenforceable, and separately for each claim so identified, state each fact known by YOU that supports, refutes, or relates to YOUR allegations of invalidity and unenforceability; identify each person who has knowledge about the subject matter of this interrogatory; and identify each document and thing relating to the subject matter of this interrogatory.

RESPONSE TO INTERROGATORY NO. 2:

Kodak objects to this Interrogatory to the extent it calls for legal conclusions or expert opinion. Kodak further objects to this Interrogatory as seeking information protected by the attorney-client privilege, the work product immunity doctrine and/or other applicable privileges or protections. Kodak objects to this Interrogatory as compound because it contains discrete subparts that require separate and distinct responses. Kodak objects to this Interrogatory as overly broad and unduly burdensome. Kodak further objects to this Interrogatory to the extent it seeks to impose additional burdens or duties on Kodak that exceed the scope of reasonable and permissible discovery under the Federal Rules of Civil Procedure, the Local Civil Rules for the District of Delaware, or the Individual Rules of the Judge(s) hearing this matter. This interrogatory is premature in light of the expert discovery schedule agreed to by the parties and reflected in the Court's scheduling order. This interrogatory is also premature because it seeks Kodak's contentions and analysis before Kodak has completed discovery relating to invalidity, before Kodak has conducted expert discovery on invalidity, and before the Court has issued a claim construction ruling. Subject to these objections and the general objections set forth above, Kodak responds as follows:

Kodak refers Philips to the individuals identified in Kodak's initial disclosures and

Kodak's document production. Kodak's investigation into this Interrogatory is ongoing. Kodak will supplement and/or amend this response as circumstances and its ongoing investigation warrant.

INTERROGATORY NO. 3:

For every claim of the patent-in-suit that YOU allege is invalid over prior art under 35 U.S.C. §§ 102 or 103, describe in a claim chart, separately for each claim so identified, how each and every claim limitation is disclosed or suggested by specific teachings in identified items of prior art; identify each person who has knowledge about the subject matter of this interrogatory; and identify each document and thing relating to the subject matter of this interrogatory.

RESPONSE TO INTERROGATORY NO. 3:

Kodak objects to this Interrogatory to the extent it calls for legal conclusions or expert opinion. Kodak further objects to this Interrogatory as seeking information protected by the attorney-client privilege, the work product immunity doctrine and/or other applicable privileges or protections. Kodak objects to this Interrogatory as compound because it contains discrete subparts that require separate and distinct responses. Kodak objects to this Interrogatory as overly broad and unduly burdensome. This interrogatory is premature in light of the expert discovery schedule agreed to by the parties and reflected in the Court's scheduling order. This interrogatory is also premature because it seeks Kodak's contentions and analysis before Kodak has completed discovery relating to invalidity, before Kodak has conducted expert discovery on invalidity, and before the Court has issued a claim construction ruling. Subject to these objections and the general objections set forth above, Kodak responds as follows:

Kodak refers Philips to the individuals identified in Kodak's initial disclosures and Kodak's document production. Kodak's investigation into this Interrogatory is ongoing. Kodak

will supplement and/or amend this response as circumstances and its ongoing investigation warrant.

INTERROGATORY NO. 4:

Separately for each JPEG image encoding product or service identified in YOUR response to Interrogatory No. 1, identify each person who is knowledgeable about the design, development, structure, configuration, functioning, or use of the product or service; and identify all documents and things that refer or relate to the design, development, structure, configuration, functioning, or use of the product or service.

RESPONSE TO INTERROGATORY NO. 4:

Kodak objects to this Interrogatory as vague and ambiguous, including without limitation, the use of the phrase "JPEG image encoding products or services" and the terms "configuration" and "functioning." Kodak further objects to this Interrogatory to the extent it seeks information that is beyond Kodak's possession, custody or control. Kodak further objects to this Interrogatory as being compound because it contains discrete subparts that require separate, distinct and multiple responses. Kodak objects to this Interrogatory as overly broad as to time and/or scope and unduly burdensome. Kodak will respond to this Interrogatory applying the relevant Time Period as defined by Philips' First Set of Interrogatories. Kodak further objects to this Interrogatory to the extent it seeks to elicit information subject to and protected by the attorney-client privilege, the attorney work product doctrine and/or any other applicable privileges, protections, or immunities. Subject to the foregoing general and specific objections, Kodak responds to this Interrogatory as follows:

Persons having knowledge about Kodak products and services that, depending on their design, construction or particular use, might either implement or utilize the baseline sequential

mode of the JPEG standard, ISO/IEC 10918-1, for the encoding of images include:

Majid Rabbani

Documents that relate to Kodak products or services that, depending on their design, construction or particular use, might either implement or utilize the baseline sequential mode of the JPEG standard, ISO/IEC 10918-1, for the encoding of images include:

User guides, product brochures, specifications, product briefs, web pages, promotional materials, quick tip guides, accessory compatibility charts, and installation guides for the Kodak products and services identified in response to Interrogatory No. 1.

In addition, Kodak refers Philips to the individuals identified in Kodak's initial disclosures and Kodak's document production. Kodak's investigation into this Interrogatory is ongoing. Kodak will supplement and/or amend this response as circumstances and its ongoing investigation warrant.

INTERROGATORY NO. 5:

For every claim of the patent-in-suit that YOU deny is infringed, and separately for each JPEG image encoding product or service identified in YOUR response to Interrogatory No. 1, state each fact known by YOU that supports, refutes, or relates to YOUR allegations of noninfringement, including a claim chart which specifically identifies every claim limitation which is not present, either literally or by equivalents, in each of these products or services; identify each person who has knowledge about the subject matter of this interrogatory; and identify each document and thing relating to the subject matter of this interrogatory.

RESPONSE TO INTERROGATORY NO. 5:

Kodak objects to this Interrogatory to the extent it calls for legal conclusions or expert opinion. Kodak further objects to this Interrogatory as seeking information protected by the

attorney-client privilege, the work product immunity doctrine and/or other applicable privileges or protections. Kodak objects to this Interrogatory as compound because it contains discrete subparts that require separate and distinct responses. Kodak objects to this Interrogatory as overly broad and unduly burdensome. Kodak further objects to this Interrogatory to the extent it seeks to impose additional burdens or duties on Kodak that exceed the scope of reasonable and permissible discovery under the Federal Rules of Civil Procedure, the Local Civil Rules for the District of Delaware, or the Individual Rules of the Judge(s) hearing this matter. This interrogatory is premature in light of the expert discovery schedule agreed to by the parties and reflected in the Court's scheduling order. This Interrogatory is also premature because it seeks Kodak's contentions and analysis before Kodak has completed discovery relating to noninfringement, before Kodak has conducted expert discovery on noninfringement, before Philips has provided its contentions relating to infringement and before the Court has issued a claim construction ruling. Subject to these objections and the general objections set forth above, Kodak responds as follows:

Kodak's investigation into this Interrogatory is ongoing. Kodak will supplement and/or amend this response following receipt of Philips' infringement contentions and as circumstances and its ongoing investigation warrant.

INTERROGATORY NO. 6:

State each fact known by YOU that supports, refutes, or relates to YOUR allegation that YOU have not willfully infringed the patent-in-suit, including any attempts to design around the patent-in-suit and the identity of any opinions or analyses of counsel; identify each person who has knowledge about the subject matter of this interrogatory; and identify each document and thing relating to the subject matter of this interrogatory.

RESPONSE TO INTERROGATORY NO. 6:

Kodak objects to this Interrogatory as being compound because it contains discrete subparts that require separate distinct and multiple responses. Kodak further objects to this Interrogatory as seeking information protected by the attorney-client privilege, the work product immunity doctrine and/or other applicable privileges or protections. Kodak objects to this Interrogatory to the extent it calls for legal conclusions or expert opinion. Kodak further objects to this Interrogatory to the extent it seeks to impose additional burdens or duties on Kodak that exceed the scope of reasonable and permissible discovery under the Federal Rules of Civil Procedure, the Local Civil Rules for the District of Delaware, or the Individual Rules of the Judge(s) hearing this matter. Subject to these objections and the general objections set forth above, Kodak responds as follows:

Kodak received a communication from Jack D. Slobod of Philips, addressed to Thomas H. Close and dated October 1, 2002 which stated Philips' apparent belief that Kodak products, software and services were covered by the patent-in-suit. Kodak investigated the scope of the patent-in-suit and formed a good faith belief that it did not infringe and further that a court would hold the patent-in-suit invalid and/or unenforceable. Kodak continues to assert that it does not infringe the patent-in-suit and, therefore, cannot willfully infringe.

In addition, Kodak refers Philips to Kodak's document production. Kodak's investigation into this Interrogatory is ongoing. Kodak will supplement this response as circumstances and its ongoing investigation warrant.

INTERROGATORY NO. 7:

If YOU contend that any of the JPEG image encoding products or services identified in YOUR response to Interrogatory No. 1 were licensed, impliedly or otherwise, under the patent-

in-suit, state each fact known by YOU that supports, refutes, or relates to YOUR contention, including the particular products or services that were allegedly licensed, the number of products or services that were allegedly licensed, the particular patents or patent pools that were allegedly licensed, the particular agreements that allegedly licensed those products or services, the specific parties to any such license or patent pool agreements, identify each person who has knowledge about the subject matter of this interrogatory; and identify each document and thing relating to the subject matter of this interrogatory.

RESPONSE TO INTERROGATORY NO. 7:

Kodak objects to this Interrogatory as vague and ambiguous, including without limitation, its use of the phrase "JPEG image encoding products or services." Kodak further objects to this Interrogatory as being compound because it contains discrete subparts that require separate distinct and multiple responses. Kodak further objects to this Interrogatory to the extent it seeks information that is beyond Kodak's possession, custody or control. Kodak further objects to this Interrogatory as seeking information protected by the attorney-client privilege, the work product immunity doctrine and/or other applicable privileges or protections. Kodak objects to this Interrogatory to the extent it calls for legal conclusions or expert opinion. Kodak objects to this Interrogatory as overly broad and unduly burdensome. Kodak further objects to this Interrogatory to the extent it seeks to impose additional burdens or duties on Kodak that exceed the scope of reasonable and permissible discovery under the Federal Rules of Civil Procedure, the Local Civil Rules for the District of Delaware, or the Individual Rules of the Judge(s) hearing this matter. Subject to these objections and the general objections set forth above, Kodak responds as follows:

Kodak contends it has an express license under the patent-in-suit to the JPEG image encoding products or services identified in Kodak's response to Interrogatory No. 1 because effective January 1, 2000, Kodak entered into a licensing agreement with MPEG LA, L.L.C., the licensing administrator for the MPEG-4 Visual Patent Portfolio. The MPEG-4 Visual Patent Portfolio is a pool of patents which includes the patent-in-suit. Therefore, because Kodak is licensed to the MPEG-4 Visual Patent Portfolio, it is expressly licensed to the patent-in-suit.

Kodak also asserts it has an implied license under the patent-in-suit to the JPEG image encoding products or services identified in Kodak's response to Interrogatory No. 1, through the doctrine of equitable estoppel. Philips, through its conduct, gave its consent to Kodak, and others in still image compression related industries, to utilize the technology allegedly covered by the patent-in-suit and to incorporate the JPEG standard into their products. Kodak relied on Philips' conduct and reasonably believed that Philips would not assert any patents against users of the JPEG standard. Because Philips is now attempting to assert its rights to the patent-in-suit, Kodak will be materially prejudiced if Philips were allowed to proceed with this claim given the substantial investment Kodak has made in design, development, manufacture and marketing of products that implement the JPEG standard. Therefore, Philips conduct gives rise to an implied license to the technology allegedly covered by the patent-in-suit. Based on the information currently available to Kodak, Philips' conduct in connection with JPEG standard setting is summarized as follows:

Efforts to develop the JPEG standard began in or about September 1982 when ISO Working Group 8 was established and assigned the task of identifying picture coding mechanisms and encoding principles for graphic and photographic images. Soon thereafter, a subgroup of ISO Working Group 8, known as the "Photographic Experts Group" (or "PEG"),

began analyzing options for standardizing a compression technique for still images. PEG became JPEG (the "Joint Photographic Experts Group") when ISO Working Group 8 began to collaborate with a subgroup from a different standard-setting body, CCITT Study Group VIII. At least as early as April 1984, Philips was a contributing member of ISO Working Group 8. Philips continued to participate in and attend meetings of ISO Working Group 8 through at least the early 1990s.

At least as early as June 1985, Philips was a member of CCITT Study Group VIII. This is the group that collaborated with ISO Working Group 8 to form JPEG and was the first to publish the JPEG standard as an official CCITT Recommendation, T.81, in September 1992. Since as early as December 1983, CCITT policy required study group members to disclose known patents concerning any subject matter under study. To the extent such patents existed, CCITT policy stated that patent holders were required to make the patent available to members and to grant licenses on a non-discriminatory basis and for reasonable fees. Philips continued to participate in and attend meetings of CCITT Study Group VIII through at least the early 1990s.

Philips was also an active member of CCITT Study Group XV at least as early as July 1985. CCITT Study Group XV developed Recommendation H.261, a precursor to the video compression standard known universally as "MPEG." CCITT Study Group XV also coordinated its efforts with JPEG. Philips continued to participate in CCITT Study Group XV meetings through at least the early 1990s.

On September 13, 1986, Philips filed German patent application no. 3,631,252, the first of three German applications to which the patent-in-suit claims priority.

On November 11, 1986, PEG became JPEG when experts from ISO Working Group 8 and CCITT Study Group VIII held their first combined meeting in New Jersey. The meeting,

like subsequent JPEG meetings, was held under the auspices of ISO Working Group 8. The initial years of JPEG were dedicated to reaching agreement on the requirements of a still image coding system. It was also announced that CCITT Study Group XV—the CCITT video compression study group in which Philips participated—would be informed of JPEG's work.

On November 8, 1986, Philips filed German patent application no. 3,638,127, the second of three German applications to which the patent-in-suit claims priority.

In or around November 1986, Philips disclosed 2-D VLC, the subject matter of the patent-in-suit and EP '748 to CCITT Study Group XV which was working on what would later be known as the MPEG standard. Notably, Philips did not make the same disclosure to CCITT Study Group VIII or JPEG in connection with development of the JPEG standard.

In March 1987, Philips representative Simon Turner (Philips Research Laboratories) attended a JPEG meeting in Darmstadt. At the meeting, the participants discussed twelve different compression techniques that were being considered for the JPEG standard. One of those proposals, ESPRIT's Adaptive Discrete Cosine Transform ("ADCT") proposal, was ultimately chosen for the JPEG standard. Philips now claims that this technology infringes the patent-in-suit.

On May 23, 1987, Philips filed German patent application no. 3,717,399, the third of three German applications to which the patent-in-suit claims priority.

In June 1987, at a JPEG meeting in Copenhagen, JPEG considered ten compression techniques (out of an original twelve proposals) and chose three finalists for the JPEG standard: (1) Adaptive Discrete Cosine Transform ("ADCT"), proposed by ESPRIT; (2) Adaptive Binary Arithmetic Coding ("ABAC"), proposed by IBM; and (3) Generalized Block Truncated Coding

("GBTC"), proposed by the Japanese national body. ADCT eventually won the competition and became the baseline for the JPEG standard.

On September 11, 1987, Philips filed United States Patent Application No. 96,177, which issued as the patent-in-suit on February 13, 1990.

In or around November 1987, ISO Working Group 8 sent a memorandum to CCITT Study Group XV requesting to establish a "formal liaison" between the two groups. The November 1987 memorandum, which appears to have been distributed to CCITT Study Group XV members in January 1988, explained "JPEG is currently aiming at a single coding algorithm for still images to be agreed end of January 1988, and as far as JPEG knows, SGXV is also aiming at a recommendation on a unified algorithm for videoconferencing services...." The memorandum identified the JPEG ADCT coding technique as a finalist and noted several "commonalities" between the ADCT technique and the technique being considered by CCITT Study Group XV—the technique that had led Philips to make the November 1986 technical disclosure of the subject matter of the patent-in-suit to CCITT Study Group XV.

At the January 1988 CCITT Study Group XV meeting in Tokyo, Japan, the group agreed to send a positive response to JPEG's request for coordination. Among other things, the response referenced "two-dimensional variable word-length coding" (2-D VLC), the same technique that Philips now contends infringes the patent-in-suit. Philips representative Joachim Speidel (Philips Kommunikations Industrie AG) attended the meeting and is listed in the meeting report as a "core member" of Study Group XV.

In or around January 1988, JPEG evaluated the three finalists for the JPEG baseline system—ADCT, ABAC and GBTC. Although the committee concluded there was technically "no big difference" among the three candidates, ADCT received the highest marks on subjective

testing and JPEG made ADCT the "first candidate" for the standard. Philips representative Norman Richards (Philips Research Laboratories) attended the January 1988 JPEG meeting but did not disclose the patent interests Philips now claims are applicable to the JPEG standard.

In February 1988, Philips representatives Dr. Ulf Rothgordt and Karl-Heinz Wenzel (both of Philips Kommunikations Industrie AG) attended a CCITT Study Group VIII meeting at which the work of that group from 1985 through 1988 was summarized, including a report on Study Group VIII's participation in the development of the JPEG standard.

In May 1988, Philips representative Gerald Weth (Philips Kommunikations Industrie AG) attended a JPEG meeting in Ottowa, Canada that included a presentation of the draft functional specification of the JPEG standard. At this meeting, the committee chairman distributed a memo titled "Patent Policy on the JPEG standard." It included a list of patents previously disclosed to CCITT Study Group XV (the committee working on the precursor to the MPEG video compression standard). Of note, Philips had not yet disclosed its MPEG related German patent applications to Study Group XV and therefore those patent applications did not appear on that list. The chairman's memo stated:

> We would like to make great efforts to find out relevant patents, and if one or more such patents will be found, we would like to ask patent holders to declare to be obedient to the patent policy of ISO and CCITT. However, complete survey cannot be done before standardization, thus I would like to suggest [sic] following. To ask each national member body to adopt our patent policy. The holders of patents which are relevant to the standard should first clarify the existence of patents, then should declare in ISO/CCITT meeting that they are obedient to the policy even if they are aware of the fact after the standardization.

In September 1988, Philips disclosed to CCITT Study Group XV the three German patent applications to which the patent-in-suit claims priority. In marked contrast, Philips never disclosed these applications to JPEG, CCITT Study Group VIII, or ISO Working Group 8 despite its participation in these committees.

The JPEG committee approved Recommendation 5 at its February 1989 meeting in Livingston, New Jersey. Recommendation 5 called for the submission of "patent assurances" to the JPEG committee. A number of JPEG members responded to this call for patents, including IBM, DEC, Mitsubishi, NEC (on behalf of the Japan National Body), CCETT, SAT and Kodak.

In July 1989, Philips representatives John Morris (Philips Research Laboratories) and Hendrick Eisema (Philips Consumer Electronics B.V.) attended an ISO Working Group 8 Plenary meeting in Stockholm. The meeting included two separate progress reports on the development of the JPEG standard and it was indicated that once a draft JPEG proposal was complete it would be circulated to all WG8 members.

In October 1989, Philips provided patent statements to CCITT Study Group XV stating that it was willing to grant licenses to Philips' relevant patents on reasonable and non-discriminatory terms for use with MPEG. The patent-in-suit issued on February 13, 1990.

In July 1990, Philips representatives Erik Schylander (Philips International B.V.) and John Morris (Philips Research Laboratories) attended an ISO Working Group 8 Plenary meeting in Porto, Portugal at which JPEG reported that final drafting of the JPEG Committee Draft (commonly called a "CD") would be finished by the end of October 1990. The Philips representatives did not disclose the purported patent interests, including the newly-issued patent-in-suit, Philips now claims apply to the JPEG standard.

Just a few months later, in letters dated December 5 and 7, 1990, Philips provided licensing statements regarding its patents to the International Standards Organization ("ISO") MPEG committee, much as it had done for the CCITT committee. Philips stated that upon adoption of the MPEG Standard by the ISO, Philips would grant licenses under its applicable patents on "reasonable, non-discriminating terms and conditions[.]"

During 1991, as JPEG moved closer to recommending the elevation of the JPEG Committee Draft to the level of Draft International Standard (or DIS), several JPEG members continued to express concern about identifying patents applicable to the JPEG standard. In response to this concern, the JPEG chairman issued a memorandum to JPEG on August 4, 1991, requesting that JPEG members disclose their applicable patents. The JPEG chairman also asked JPEG members to identify all patents "that you know of, whether held by you, by another member of your company or organization, by any individual, company, or organization anywhere in the world." Mitsubishi, IBM, Autograph and Kodak submitted responses in which they disclosed applicable patents or stated they were unaware of such patents.

On August 19, 1991, the JPEG chairman sent another memorandum to JPEG attaching a draft of a new annex, Annex L, to be added to the JPEG standard. The memorandum explained that "it has been widely requested that…all known patents which are believed to be required for implementation of any specified coding process, be listed in [the JPEG standard]." Later that month, Philips representatives Erik Schylander (Philips International B.V.) and John Morris (Philips Research Laboratories) attended a joint JPEG-MPEG meeting in Santa Clara, California. During this meeting, JPEG approved the introductory language of Annex L as a part of the JPEG standard. Despite their attendance at the August 1991 meeting, Philips' representatives did not disclose the purported patent interests, including the patent-in-suit, that Philips now claims apply to the JPEG standard. As a result, the patent-in-suit is not listed in Annex L.

In October 1991, Philips representative Karl-Heinz Wenzel (Philips Kommunikations Industrie AG) attended a CCITT Study Group VIII meeting in Geneva. At this meeting the committee voted to approve a draft of the JPEG standard that later issued as CCITT Recommendation T.81. In addition, at the meeting IBM disclosed a proposed licensing

arrangement for its JPEG standard related patents. IBM's letter stated that IBM was willing to license its applicable patents for a one-time fee of $5,000 or $10,000.

On June 11, 1992, Philips' John Morris (Philips Research Laboratories) chaired the fourth meeting of BSI's IST/37, the subcommittee that was responsible for standards for coding picture, audio, multimedia and hypermedia information and that also represented the United Kingdom in the work of the international committee ISO/IEC JTC1/SC29 that oversaw the development of CCITT and ISO standards for JPEG. During the meeting, the European membership considered a draft of the JPEG standard (commonly referred to as a "DIS" or "draft international standard") and voted to "approve DIS 10918-1 without comments." On September 18, 1992, the joint effort between ISO Working Group 8 and CCITT Study Group VIII led to the approval of CCITT Recommendation T.81, the first publication of the JPEG standard. On February 15, 1994, the ISO formally approved ISO International Standard 10918-1.

In June 1994, AT&T offered to license its patents related to the JPEG standard to the extent AT&T's patents were "essential to the implementation" of the JPEG standard. Specifically, AT&T offered to license two AT&T patents "essential to the standard" for a one-time royalty of $5,000 and to license a group of seven other patents related to the standard for an "additional one time fee of $10,000."

The above facts show that Philips participated in both the JPEG standard setting committees and the MPEG standard setting committees. Philips disclosed the patent-in-suit to the MPEG committees, but failed to do the same to the JPEG committee, even while other companies like IBM and AT&T were doing so. Philips knew and presumably accepted the patent disclosure policies of both committees. Philips standard setting conduct led Kodak, a

participant in the JPEG standard setting committee, to believe that Philips either did not have a patent covering the JPEG technology, or did not wish to ever assert such patent rights. Relying on this belief, Kodak made substantial investments into design, development, manufacture and marketing of products and services that incorporate the JPEG standard. In addition, Philips waited until approximately ten years after the JPEG standard was first adopted when Kodak was locked into use of the standard in its products to first contact Kodak about its purported patent rights. Philips now seeks royalties based on the sale of Kodak's products and services that implement the JPEG standard. Given these facts: Philips' failure to act, Kodak's reliance on such conduct, and the harm Philips will cause to Kodak if it is allowed to recover on such a claim, Kodak has an implied license to the patent-in-suit through the doctrine of equitable estoppel.

In addition, Kodak refers Philips to the individuals identified in Kodak's initial disclosures and Kodak's document production. Kodak's investigation into this Interrogatory is ongoing. Kodak will supplement this response as circumstances and its ongoing investigation warrant.

INTERROGATORY NO. 8:

Describe in detail all facts that support, refute, or relate to YOUR assertions that this action is barred by laches, equitable estoppel, patent exhaustion, license, release, waiver/estoppel, and/or unclean hands; identify each person who has knowledge about the subject matter of this interrogatory; and identify each document and thing relating to the subject matter of this interrogatory.

RESPONSE TO INTERROGATORY NO. 8:

Kodak objects to this Interrogatory as being compound because it contains discrete

subparts that require separate distinct and multiple responses. Kodak will treat this Interrogatory as five separate Interrogatories. Kodak further objects to this Interrogatory as seeking information protected by the attorney-client privilege, the work product immunity doctrine and/or other applicable privileges or protections. Kodak further objects to this Interrogatory to the extent it seeks information that is beyond Kodak's possession, custody or control. Kodak objects to this Interrogatory to the extent it calls for legal conclusions or expert opinion. Kodak objects to this Interrogatory as overly broad and unduly burdensome. Kodak further objects to this Interrogatory to the extent it seeks to impose additional burdens or duties on Kodak that exceed the scope of reasonable and permissible discovery under the Federal Rules of Civil Procedure, the Local Civil Rules for the District of Delaware, or the Individual Rules of the Judge(s) hearing this matter. Subject to these objections and the general objections set forth above, Kodak responds as follows:

Laches:

Philips has unreasonably and inexcusably delayed in filing suit for infringement of the patent-in-suit to the material prejudice of Kodak. The patent-in-suit was issued to Peter Vogel in 1990. Kodak began making and publicly marketing, advertising and selling its products which incorporated the JPEG standard in the early 1990s. Despite Kodak's widespread public marketing and sale of JPEG standard enabled products, Philips did not inform Kodak of its purported belief that Kodak infringed its patent rights until a communication on October 1, 2002. Philips then did not file suit until April 18, 2006. Philips waited a presumptively unreasonable period of time to file suit after it knew, or should have known, of Kodak's allegedly infringing activities.

During Philips' delay, Kodak invested significant resources into the design, development, manufacture and marketing of JPEG standard enabled products. If Philips had asserted its alleged patent interests and made the exorbitant royalty demands in the 1990s that it now seeks from Kodak, Kodak and other industry participants could have used one of the many available, and equivalently performing, compression techniques. By the time Philips filed suit, Kodak, its customers and consumers, and entire industries worldwide utilizing still image compression were locked into the JPEG standard making it no longer feasible for Kodak to abandon the JPEG standard for an alternative compression technique. Further, the documentation which readily existed in the 1990's related to the JPEG standard setting committee's meetings, decisions and actions are now, many years later, extremely hard to procure. Kodak must rely on such documentation to properly defend itself in this action. Philips' assertion of its patent rights at this stage severely prejudices Kodak, both economically and evidentiary. Therefore, Philips should be barred by the doctrine of laches from seeking pre-suit damages for alleged infringement of the patent-in-suit.

Kodak incorporates fully by reference its response to Interrogatory No. 7. In addition, Kodak refers Philips to the individuals identified in Kodak's initial disclosures and Kodak's document production. Kodak's investigation into this Interrogatory is ongoing. Kodak will supplement this response as circumstances and its ongoing investigation warrant.

Equitable Estoppel:

Philips, through its conduct and misleading silence represented to Kodak that it would not assert any patent rights related to the JPEG standard. As noted in Kodak's response to Interrogatory 7, Philips participated in both JPEG standard setting committees and MPEG standard setting committees. Kodak also participated in these standard setting committees and

was aware of Philips' participation. During its involvement in the MPEG standard setting committees, Philips disclosed three German patent applications to which the patent-in-suit claims priority, but failed to disclose the patent-in-suit to the JPEG related standard setting committees. Philips' failure to disclose the patent-in-suit to the JPEG related standards setting committees was in violation of express duties created through Philips' membership in those committees, the written patent disclosure policies of those committees and express requests for patent disclosure by meeting participants. Philips silence was also in breach of implied disclosure duties created by the patent disclosures made by, and disclosure expectations of, other JPEG standard related committee members. In addition, Philips likely voted to approve the JPEG standard even though it contained an annex indicating that no identified patents were required for the JPEG standard's implementation. With these actions, Philips led Kodak to believe that it would not assert any patent rights against the JPEG standard. Kodak, relying on Philips' conduct and silence, invested substantial resources in design, development, manufacture and marketing of products that incorporate the JPEG standard. If Philips is allowed to assert the patent-in-suit against the JPEG standard at this stage after representing to Kodak and the world that it would not do so, Kodak would be materially harmed.

Kodak incorporates fully by reference its response to Interrogatory No. 7. In addition, Kodak refers Philips to the individuals identified in Kodak's initial disclosures and Kodak's document production. Kodak's investigation into this Interrogatory is ongoing. Kodak will supplement this response as circumstances and its ongoing investigation warrant.

Patent Exhaustion/License/Release:

Kodak incorporates fully by reference its response to Interrogatory No. 7. In addition, Kodak refers Philips to the individuals identified in Kodak's initial disclosures and Kodak's

document production. Kodak's investigation into this Interrogatory is ongoing. Kodak will supplement and/or amend this response as circumstances and its ongoing investigation warrant.

Waiver/estoppel:

Kodak incorporates fully by reference the above response relating to equitable estoppel and its response to Interrogatory No. 7. In addition, Kodak refers Philips to the individuals identified in Kodak's initial disclosures and Kodak's document production. Kodak's investigation into this Interrogatory is ongoing. Kodak will supplement and/or amend this response as circumstances and its ongoing investigation warrant.

Unclean hands:

Kodak incorporates fully by reference its response to Interrogatory No. 7. In addition, Kodak refers Philips to the individuals identified in Kodak's initial disclosures and Kodak's document production. Kodak's investigation into this Interrogatory is ongoing. Kodak will supplement and/or amend this response as circumstances and its ongoing investigation warrant.

INTERROGATORY NO. 9:

Describe in detail all facts that support, refute, or relate to YOUR assertions that Philips engaged in deceptive trade practices in violation of 6 Del. C. § 2532, committed fraud, and/or made a negligent misrepresentation; identify each person who has knowledge about the subject matter of this interrogatory; and identify each document and thing relating to the subject matter of this interrogatory.

RESPONSE TO INTERROGATORY NO. 9:

Kodak objects to this Interrogatory as being compound because it contains discrete subparts that require separate distinct and multiple responses. Kodak will treat this Interrogatory as three separate Interrogatories. Kodak objects to this Interrogatory as overly broad for lacking

any reasonable limitation as to time and/or scope. Kodak objects to this Interrogatory as seeking information protected by the attorney-client privilege, the work product immunity doctrine and/or other applicable privileges or protections. Kodak objects to this Interrogatory to the extent it calls for legal conclusions or expert opinion. Kodak further objects to this Interrogatory to the extent it seeks to impose additional burdens or duties on Kodak that exceed the scope of reasonable and permissible discovery under the Federal Rules of Civil Procedure, the Local Civil Rules for the District of Delaware, or the Individual Rules of the Judge(s) hearing this matter. Kodak further objects to this Interrogatory to the extent it seeks information that is beyond Kodak's possession, custody or control. Subject to these objections and the general objections set forth above, Kodak responds as follows:

Deceptive Trade Practices:

Philips has engaged in deceptive trade practices because, in the course of its business, Philips caused a likelihood of confusion or misunderstanding as to the validity and enforceability of the patent-in-suit, in violation of 6 Del. C. § 2532, on account of the silence and misrepresentations of Philips about the existence and relevance of the patent-in-suit, its foreign counterparts, and the foreign application to which the patent-in-suit claims priority, to the JPEG standard during its participation in the development and approval of the JPEG standard from 1984 to 1994, as well as Philips' continued silence thereafter and during the years Kodak incorporated the JPEG standard into its products and services. Further, Philips disparaged Kodak's goods, services, and businesses by falsely and misleadingly alleging that Kodak's products infringe the patent-in-suit and that consumers will not be able to continue using Kodak's products that incorporate the JPEG standard, in violation of 6 Del. C. § 2532. Finally, Philips has engaged in other conduct that creates a likelihood of confusion or misunderstanding,

including but not limited to engaging in baseless patent litigation designed only to force Kodak into taking a license to the invalid and unenforceable patent-in-suit (which Kodak does not infringe) in violation of 6 Del. C. § 2532. On information and belief, Philips has acted in bad faith while engaging in these deceptive trade practices. Kodak has been harmed or can reasonably expect to be harmed by Philips' deceptive trade practices. This harm will continue or can reasonably be expected to continue as long as Philips continues to falsely assert that the patent-in-suit is infringed by Kodak's use of the JPEG standard.

Kodak incorporates fully by reference its response to Interrogatory No. 7. In addition, Kodak refers Philips to the individuals identified in Kodak's initial disclosures and Kodak's document production. Kodak's investigation into this Interrogatory is ongoing. Kodak will supplement and/or amend this response as circumstances and its ongoing investigation warrant.

Fraud:

Philips engaged in fraud on account of the silence and misrepresentations of Philips about the existence and relevance of the patent-in-suit, its foreign counterparts, and the foreign applications to which the patent-in-suit claims priority, to the JPEG standard during its participation in the development and approval of the JPEG standard from 1984 to 1994, as well as Philips' continued silence thereafter and during the years Kodak incorporated the JPEG standard into its products and services.

As a member of CCITT Study Group VIII, ISO Working Group 8, BSI's subcommittee IST/37 and JPEG—the various committees responsible for the development and approval of the JPEG standard—Philips had a duty to disclose its patent interests relevant to the JPEG standard. On information and belief, as a member of CCITT Study Group VIII, ISO Working Group 8, BSI's subcommittee IST/37 and JPEG, Philips (i) knew the technical details of the proposed

JPEG standard, (ii) was aware of the patent disclosure policies of each organization that required it to disclose patents relevant to the JPEG standard, and (iii) voted multiple times to approve the JPEG standard without disclosing the patent interests Philips now claims are relevant to the JPEG standard, including the patent-in-suit. Despite its duty to disclose relevant patents, its knowledge of the proposed JPEG standard and repeated requests to identify relevant patents to the standard-setting bodies, on information and belief, Philips intentionally failed to disclose the patent interests Philips now claims are relevant to the JPEG standard, including the patent-in-suit, its foreign counterparts, or the foreign applications to which the patent-in-suit claims priority.

Kodak also participated in the development and adoption of the JPEG standard and reasonably relied to its economic and evidentiary prejudice on Philips' silence and misrepresentations about the irrelevance of the patent-in-suit to the JPEG standard as both (i) a participant in CCITT Study Group VIII, ISO Working Group 8, BSI's subcommittee IST/37 and JPEG, and (ii) a party supporting approval of the JPEG standard. Kodak also invested in products and services that incorporate the baseline JPEG standard in reasonable reliance on Philips' same silence and misrepresentations. As a result of Philips' fraudulent and intentional failure to disclose the patent-in-suit and subsequent attempts to assert the patent, Kodak has incurred damages and will continue to be damaged in the future.

Kodak incorporates fully by reference its response to Interrogatory No. 7. In addition, Kodak refers Philips to the individuals identified in Kodak's initial disclosures and Kodak's document production. Kodak's investigation into this Interrogatory is ongoing. Kodak will supplement and/or amend this response as circumstances and its ongoing investigation warrant.

Negligent Misrepresentation:

Philips engaged in negligent misrepresentation on account of the silence and misrepresentations of Philips about the existence and relevance of the patent-in-suit, its foreign counterparts, and the foreign applications to which the patent-in-suit claims priority, to the JPEG standard during its participation in the development and approval of the JPEG standard from 1984 to 1994, as well as Philips' continued silence thereafter during the years Kodak incorporated the JPEG standard into its products.

As a member of CCITT Study Group VIII, ISO Working Group 8, BSI's subcommittee IST/37 and JPEG—the various committees responsible for the development and approval of the JPEG standard—Philips had a duty to disclose its patent interests relevant to the JPEG standard. On information and belief, as a member of CCITT Study Group VIII, ISO Working Group 8, BSI's subcommittee IST/37 and JPEG, Philips (i) knew the technical details of the proposed JPEG standard, (ii) was aware of the patent disclosure policies of each organization that required it to disclose patents relevant to the JPEG standard, and (iii) voted multiple times to approve the JPEG standard without disclosing the patent interests Philips now claims are relevant to the JPEG standard, including the patent-in-suit. Despite its duty to disclose relevant patents, its knowledge of the proposed JPEG standard and repeated requests to identify relevant patents to the standard-setting bodies, Philips failed to exercise reasonable care in both (i) reviewing its patents and comparing them to the proposed JPEG standard, and (ii) failing to accurately communicate information regarding its patents to the JPEG committee.

Kodak also participated in the development and adoption of the JPEG standard and reasonably relied to its economic and evidentiary prejudice on Philips' silence and misrepresentations about the irrelevance of the patent-in-suit to the JPEG standard as both (i) a

participant in CCITT Study Group VIII, ISO Working Group 8, BSI's subcommittee IST/37 and JPEG, and (ii) a party supporting approval of the JPEG standard. Kodak also invested in products and services that incorporate the baseline JPEG standard in reasonable reliance on Philips' same silence and misrepresentations. As a result of Philips' negligent misrepresentation regarding the patent interests it now claims are relevant to the JPEG standard, including the patent-in-suit, Kodak has incurred damages and will continue to be damaged in the future.

Kodak incorporates fully by reference its response to Interrogatory No. 7. In addition, Kodak refers Philips to the individuals identified in Kodak's initial disclosures and Kodak's document production. Kodak's investigation into this Interrogatory is ongoing. Kodak will supplement and/or amend this response as circumstances and its ongoing investigation warrant.

INTERROGATORY NO. 10:

Separately for each JPEG image encoding product or service identified in YOUR response to Interrogatory No. 1, identify each and every manufacturer or developer of the product or service for each month from April 18, 2000, including an identification of all business names and addresses of the manufacturer or developer; state the total quantity of the product or service that was provided to YOU or YOUR customers from each manufacturer or developer; identify each person who has knowledge about the subject matter of this interrogatory; and identify each document and thing relating to the subject matter of this interrogatory.

RESPONSE TO INTERROGATORY NO. 10:

Kodak objects to this Interrogatory as vague and ambiguous, including without limitation, its use of the phrase "JPEG encoding product or service." Kodak further objects to this Interrogatory as being compound because it contains discrete subparts that require separate distinct and multiple responses. Kodak further objects to the extent this Interrogatory seeks

confidential information from third parties that Kodak is under an obligation not to disclose. Kodak objects to this Interrogatory as overly broad and unduly burdensome. Kodak further objects to this Interrogatory to the extent it seeks to impose additional burdens or duties on Kodak that exceed the scope of reasonable and permissible discovery under the Federal Rules of Civil Procedure, the Local Civil Rules for the District of Delaware, or the Individual Rules of the Judge(s) hearing this matter. Kodak further objects to this Interrogatory to the extent it seeks information that is beyond Kodak's possession, custody or control. Subject to these objections and the general objections set forth above, Kodak responds as follows:

Kodak refers Philips to the individuals identified in Kodak's initial disclosures and Kodak's document production. Kodak's investigation into this Interrogatory is ongoing. Kodak will supplement and/or amend this response as circumstances and its ongoing investigation warrant.

Product Category	Product	Manufacturer
Consumer Digital Camera	C300	Altek, Kunshan
Consumer Digital Camera	C310	Altek
Consumer Digital Camera	C315	Altek
Consumer Digital Camera	C330	Altek
Consumer Digital Camera	C340	Funai with PC
Consumer Digital Camera	C360	KEPS
Consumer Digital Camera	C530	Altek
Consumer Digital Camera	C433	Funai
Consumer Digital Camera	C503	Funai
Consumer Digital Camera	C533	KEPS
Consumer Digital Camera	C603	Altek
Consumer Digital Camera	C623	Funai
Consumer Digital Camera	C633	Altek
Consumer Digital Camera	C643	Altek
Consumer Digital Camera	C653	Funai
Consumer Digital Camera	C663	DPC/KEPS
Consumer Digital Camera	C703	Altek

Product Category	Product	Manufacturer
Consumer Digital Camera	C743	Aletk
Consumer Digital Camera	C763	Altek
Consumer Digital Camera	C875	KEPS
Consumer Digital Camera	CD33	Altek
Consumer Digital Camera	CD40	Altek
Consumer Digital Camera	CD43	Altek
Consumer Digital Camera	CD50	Altek
Consumer Digital Camera	CW330	Altek
Consumer Digital Camera	CX4200	Altek
Consumer Digital Camera	CX4210	Altek
Consumer Digital Camera	CX4230	Altek
Consumer Digital Camera	CX4300	Altek
Consumer Digital Camera	CX4310	Altek
Consumer Digital Camera	CX6200	Altek
Consumer Digital Camera	CX6230	Altek
Consumer Digital Camera	CX6330	KEPS
Consumer Digital Camera	CX6445	KEPS
Consumer Digital Camera	CX7220	Altek
Consumer Digital Camera	CX7300	Altek
Consumer Digital Camera	CX7310	Kunshan
Consumer Digital Camera	CX7330	Chinon, CM3, Funai
Consumer Digital Camera	CX7430	KEPS
Consumer Digital Camera	CX7525	KEPS
Consumer Digital Camera	CX7530	KEPS
Consumer Digital Camera	DC200	Chinon
Consumer Digital Camera	DC200 Plus	Chinon
Consumer Digital Camera	DC210	Chinon
Consumer Digital Camera	DC210 Plus	Chinon
Consumer Digital Camera	DC210a	Chinon
Consumer Digital Camera	DC215	Chinon
Consumer Digital Camera	DC215 Millennium	Chinon
Consumer Digital Camera	DC220	Chinon
Consumer Digital Camera	DC240	Chinon
Consumer Digital Camera	DC240I	Chinon
Consumer Digital Camera	DC260	Chinon
Consumer Digital Camera	DC265	Chinon
Consumer Digital Camera	DC280	Chinon

Product Category	Product	Manufacturer
Consumer Digital Camera	DC280J	Chinon
Consumer Digital Camera	DC290	Chinon
Consumer Digital Camera	DC3200	Sharp
Consumer Digital Camera	DC3400	Chinon
Consumer Digital Camera	DC3800	West, OEM
Consumer Digital Camera	DC4800	Chinon
Consumer Digital Camera	DC5000	Chinon
Consumer Digital Camera	DX3215	Sharp
Consumer Digital Camera	DX3500	Chinon, KEPS
Consumer Digital Camera	DX3600	Chinon, KEPS
Consumer Digital Camera	DX3700	Sharp
Consumer Digital Camera	DX3900	Chinon
Consumer Digital Camera	DX4330	KEPS
Consumer Digital Camera	DX4530	KEPS
Consumer Digital Camera	DX4900	Chinon, KEPS
Consumer Digital Camera	DX6340	KEPS
Consumer Digital Camera	DX6440	KEPS
Consumer Digital Camera	DX6490	Chinon, CM2, Sintai
Consumer Digital Camera	DX7440	KEPS
Consumer Digital Camera	DX7590	Chinon, CM2
Consumer Digital Camera	DX7630	KEPS
Consumer Digital Camera	EasyShare One	KEPS
Consumer Digital Camera	EZ200	Viewquest, OEM
Consumer Digital Camera	LS420	Chinon
Consumer Digital Camera	LS443	Chinon, Dahai
Consumer Digital Camera	LS633	KEPS
Consumer Digital Camera	LS743	Chinon, CM2, Sintai
Consumer Digital Camera	LS753	CM2, Sintai
Consumer Digital Camera	LS755	Sanyo
Consumer Digital Camera	MC3 Portable Multi-Media Device	Viewquest
Consumer Digital Camera	P712	Sanyo
Consumer Digital Camera	P850	Sanyo Japan/China
Consumer Digital Camera	P880	Sanyo Japan/Korea
Consumer Digital Camera	PalmPix Palm III	Viewquest
Consumer Digital Camera	PalmPix Palm m100	Viewquest
Consumer Digital Camera	PalmPix Palm m500	Viewquest

Product Category	Product	Manufacturer
Consumer Digital Camera	V705	KEPS
Consumer Digital Camera	V530	DPC, CM2, Sintai
Consumer Digital Camera	V550	DPC, CM2, Sintai
Consumer Digital Camera	V570	KEPS
Consumer Digital Camera	V603	CM2, Sintai
Consumer Digital Camera	V610	KEPS
Consumer Digital Camera	V803	Sintai
Consumer Digital Camera	V1003	Sintai
Consumer Digital Camera	Z612	CM2/Sintai
Consumer Digital Camera	Z650	KEPS
Consumer Digital Camera	Z700	KEPS
Consumer Digital Camera	Z710	KEPS
Consumer Digital Camera	Z712 IS	Flextronics
Consumer Digital Camera	Z730	KEPS Shanghai
Consumer Digital Camera	Z740	KEPS Shanghai
Consumer Digital Camera	Z7590	CM2, Sintai
Consumer Digital Camera	Z760	KEPS Shanghai
Consumer Digital Camera	Z885	Flextronics
Kodak Professional	DCS 315 (KODAK)	Kodak
Kodak Professional	DCS 330 (KODAK)	Kodak
Kodak Professional	DCS 520 (KODAK)	Kodak
Kodak Professional	DCS 620 KODAK	Kodak
Kodak Professional	DCS 620X (KODAK)	Kodak
Kodak Professional	DCS PRO 14N	Kodak
Kodak Professional	DCS PRO 14NX	Kodak
Kodak Professional	DCS PRO SLR/C	Kodak/Sigma
Kodak Professional	DCS PRO SLR/N	Kodak
Kodak Professional	KODAK PROF DCS 720X DIGITAL CAMERA	Kodak
Kodak Professional	KODAK PROF DCS PROBACK 645C	Kodak
Kodak Professional	KODAK PROF DCS PROBACK 645H	Kodak
Kodak Professional	KODAK PROF DCS PROBACK 645M	Kodak
Kodak Professional	KODAK PROF DCS PROBACK PLUS	Kodak
Kodak Professional	PROFESSIONAL DCS PRO BACK	Kodak

INTERROGATORY NO. 11:

Separately for each JPEG image encoding product or service identified in YOUR response to Interrogatory No. 1, identify any and all image encoding specifications and standards that were to be met by the products or services, indicate whether the products or services met those image encoding specifications and standards, and indicate how it is determined whether the products or services met those image encoding specifications and standards; identify each person who has knowledge about the subject matter of this interrogatory; and identify each document and thing relating to the subject matter of this interrogatory.

RESPONSE TO INTERROGATORY NO. 11:

Kodak objects to this Interrogatory as vague and ambiguous, including without limitation, its use of the phrases "JPEG encoding product or service" and "image encoding specifications and standards." Kodak further objects to this Interrogatory as being compound because it contains discrete subparts that require separate distinct and multiple responses. Kodak further objects to the extent this Interrogatory seeks confidential information from third parties that Kodak is under an obligation not to disclose. Kodak objects to this Interrogatory as overly broad and unduly burdensome. Kodak further objects to this Interrogatory to the extent it seeks to impose additional burdens or duties on Kodak that exceed the scope of reasonable and permissible discovery under the Federal Rules of Civil Procedure, the Local Civil Rules for the District of Delaware, or the Individual Rules of the Judge(s) hearing this matter. Kodak further objects to this Interrogatory to the extent it seeks information that is beyond Kodak's possession, custody or control. Subject to these objections and the general objections set forth above, Kodak responds as follows:

Kodak refers Philips to the individuals identified in Kodak's initial disclosures and Kodak's document production. Kodak's investigation into this Interrogatory is ongoing. Kodak will supplement this response as circumstances and its ongoing investigation warrant.

INTERROGATORY NO. 12:

Separately for each JPEG image encoding product or service identified in YOUR response to Interrogatory No. 1, and separately for each month from April 18, 2000, until the date of the response to this Interrogatory, state the total quantity of JPEG image encoding products or services that has been made, sold, offered for sale, imported into the United States, used, leased, distributed, and/or licensed by or for YOU or YOUR customers; identify each person who has knowledge about the subject matter of this interrogatory; and identify each document and thing relating to the subject matter of this interrogatory.

RESPONSE TO INTERROGATORY NO. 12:

Kodak objects to this Interrogatory as vague and ambiguous, including without limitation, its use of the phrases "JPEG encoding product or service" and "total quantity of JPEG image encoding products or services." Kodak objects to this Interrogatory on the grounds that it calls for a legal conclusion as to the terms "made, sold, offered for sale, imported into the United States, used, leased, distributed, and/or licensed." Kodak further objects to this Interrogatory as being compound because it contains discrete subparts that require separate distinct and multiple responses. Kodak objects to this Interrogatory as overly broad and unduly burdensome. Kodak further objects to this Interrogatory to the extent it seeks to impose additional burdens or duties on Kodak that exceed the scope of reasonable and permissible discovery under the Federal Rules of Civil Procedure, the Local Civil Rules for the District of Delaware, or the Individual Rules of the Judge(s) hearing this matter. Kodak further objects to the extent this Interrogatory seeks

confidential information from third parties that Kodak is under an obligation not to disclose. Kodak further objects to this Interrogatory to the extent it seeks information that is beyond Kodak's possession, custody or control. Subject to these objections and the general objections set forth above, Kodak responds as follows:

Kodak incorporates fully by reference its response to Interrogatory No. 1. In addition, Kodak refers Philips to the individuals identified in Kodak's initial disclosures and Kodak's document production. Kodak's investigation into this Interrogatory is ongoing. Kodak will supplement this response as circumstances and its ongoing investigation warrant.

INTERROGATORY NO. 13:

Separately for each JPEG image encoding product or service identified in YOUR response to Interrogatory No. 1, and separately for each month from April 18, 2000, until the date of the response to this Interrogatory, state YOUR revenues, profits, and costs for each product or service that has been made, sold, offered for sale, imported into the United States, used, leased, distributed, and/or licensed by or for YOU or YOUR customers; identify each person who has knowledge about the subject matter of this interrogatory; and identify each document and thing relating to the subject matter of this interrogatory.

RESPONSE TO INTERROGATORY NO. 13:

Kodak objects to this Interrogatory as vague and ambiguous, including without limitation, its use of the phrase "JPEG encoding product or service." Kodak further objects to this Interrogatory as being compound because it contains discrete subparts that require separate distinct and multiple responses. Kodak objects to this Interrogatory as overly broad and unduly burdensome. Kodak further objects to this Interrogatory to the extent it seeks to impose additional burdens or duties on Kodak that exceed the scope of reasonable and permissible

discovery under the Federal Rules of Civil Procedure, the Local Civil Rules for the District of Delaware, or the Individual Rules of the Judge(s) hearing this matter. This interrogatory is premature in light of the expert discovery schedule agreed to by the parties and reflected in the Court's scheduling order. Kodak further objects to the extent this Interrogatory seeks confidential information from third parties that Kodak is under an obligation not to disclose. Kodak further objects to this Interrogatory to the extent it seeks information that is beyond Kodak's possession, custody or control. Subject to these objections and the general objections set forth above, Kodak responds as follows:

Kodak refers Philips to the individuals identified in Kodak's initial disclosures and Kodak's document production. Kodak's investigation into this Interrogatory is ongoing. Kodak will supplement this response as circumstances and its ongoing investigation warrant.

Date: April 6, 2007

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CERTIFICATE OF SERVICE

I, Francis DiGiovanni, hereby certify that on April 6, 2007, I caused a copy of the foregoing document to be served by e-mail and hand-delivery on the following counsel of record:

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I, Francis DiGiovanni, hereby certify that on April 6, 2007, I caused a copy of the foregoing document to be served by e-mail and by U.S. Mail on the following counsel of record:

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