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4 <div align="right">The Printer Working Group</div>

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7 Copy Service

8 Semantic Model and Service Interface

9

10 Status: Approved

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15 **Abstract**: Network print devices have evolved to support additional multifunction services, in particular Copy Service.
16 When Copy Devices are installed in local office or enterprise networks, they need remote service, device, and job
17 management capabilities so that administrators, operators, and users can monitor their health and status. In addition,
18 such Copy Devices need remote job submission capabilities so that operators and users can create CopyJobs without
19 depending entirely on local console interfaces. This document defines a semantic model for service, device, and job
20 management and job submission for these Copy Devices.

21

22 This document is a PWG Working Draft. For a definition of "PWG
23 Working Draft", see:
24
25 ftp://ftp.pwg.org/pub/pwg/general/pwg-process30.pdf
26
27 This document is available electronically at:
28
29 ftp://ftp.pwg.org/pub/pwg/mfd/wd/wd-mfdcopymodel10-20110506.pdf

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73 support services. The IEEE Industry Standards and Technology Organization member organizations include printer
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82 **About the Printer Working Group**

83 The Printer Working Group (or PWG) is a Program of the IEEE-ISTO. All references to the PWG in this document
84 implicitly mean "The Printer Working Group, a Program of the IEEE ISTO." The PWG is chartered to make printers and
85 the applications and operating systems supporting them work together better. In order to meet this objective, the PWG will
86 document the results of their work as open standards that define print related protocols, interfaces, data models,
87 procedures and conventions. Printer manufacturers and vendors of printer related software would benefit from the
88 interoperability provided by voluntary conformance to these standards.

89 In general, a PWG standard is a specification that is stable, well understood, and is technically competent, has multiple,
90 independent and interoperable implementations with substantial operational experience, and enjoys significant public
91 support.

92 **Contact information:**

93 The Printer Working Group
94 c/o The IEEE Industry Standards and Technology Organization
95 445 Hoes Lane
96 Piscataway, NJ 08854
97 USA
98
99 MFD Web Page: http://www.pwg.org/mfd   MFD Mailing List: mfd@pwg.org
100
101 Instructions for subscribing to the MFD mailing list can be found at the following link:
102 http://www.pwg.org/mailhelp.html
103 Members of the PWG and interested parties are encouraged to join the PWG and MFD WG mailing lists in order to
104 participate in discussions, clarifications and review of the WG product.

105

₁₀₆ **Contents**

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1   Introduction

This document specifies the PWG abstract model for Copy Services of a Multifunction Device (MFD). Included in this document is the service specific terminology, data model, the theory of operation, the Copy Service interfaces and the conformance requirements. The MFD Copy Service abstract model includes the functional models and interfaces of the associated Copy Services for a local network or enterprise-connected multifunction device.

2   Overview

The MFD service addressed in this specification is the Copy Service. The Copy Service responds to queries about its capabilities, configuration and descriptive information. It responds to queries for information about CopyJobs.   It manages and processes CopyJobs with its associated CopyJobTicket.

The Copy Service, by definition, takes an input Hardcopy Document and produces an output Hardcopy Document. Although the Copy Service usually has some internal representation for the digital form of the document that is being copied, the internal representation is not visible to the user. The result of this is that a Copy Service contains zero or more Jobs and the Jobs do not contain any documents.

Each CopyJob can contain a CopyJobTicket which provides descriptive information (i.e., CopyJobDescription) as well as CopyJobProcessing and CopyDocumentProcessing instructions. CopyJobProcessing instructions apply to the Job as a whole. CopyDocumentProcessing instructions specify processing instructions applied to either the input or output Hardcopy Document. The input processing semantics are based on ScanService Semantics [WS-SCAN, PWG5108.2] while the output processing semantics are based on PrintService Semantics [RFC2911, PWG5105.1].

A client application interacting with the Copy Service contains a Copy Client. A Copy Client interacts with the End User to obtain the End User's Intent and uses the Copy Client to communicate with the Copy Service that will execute the CopyJob according to the End User Intent.

CopyJobTemplates contain instructions representing preconfigured Copy intent that can be used as is or modified by the End User. Once the End User is satisfied with the CopyJobTemplate the Copy Client uses the CopyJobTemplate as the CopyJobTicket in the job submission to the Copy Service.   CopyJobTemplates may be obtained in a number of ways. Those methods are outside the scope of this specification.

The Copy scenarios addressed in this specification range from walk-up users that use MFD's front panel to initiate a CopyJob to remote users that use their computers to initiate a CopyJob. The assumption is that it is possible to implement a Network Connected Copy Client that is accessible via the device's front panel. The model also supports external security services that protects against unauthorized use of the Copy Services and access of Copy digital data.

208   # 3   Terminology

209   ## 3.1   Conformance Terminology

210   See [RFC2119] for conformance terminology used. There are no CopyService specific conformance terms.

211   ## 3.2   Service Specific Terminology

212   See MFD Model and Common Semantics specification [PWG5108.01] for common MFD terminology used. For this
213   service the "<service>" in the MFD Terminology section is replaced with "Copy". There is no CopyService specific
214   terminology.

215

216   ## 3.3   Model Mapping Conventions

217   The CopyService model is described in this document as an XML schema. This is for the sake of convenience and
218   does not require a protocol mapping involving XML. The top level objects such as SystemConfiguration, Services,
219   and their associated Jobs can be represented in any number of ways. Abstractly they are objects which contain
220   attributes or properties that express characteristics of the object.   For the remainder of this document references to
221   attribute or element refer to XML attributes and XML elements respectively. Either of these can be abstractly
222   considered to be attributes or properties of abstract objects.

223   ## 3.4   Naming Conventions

224   The MFD Model and Common Semantics specification [PWG5108.01] describes common concepts and terms
225   used for all of the services hosted on a multifunction device. That includes the objects and their attributes in the
226   multifunction device data model. The MFD Model and Common Semantics specification [PWG5108.01] uses
227   abstract names for the semantic elements (e.g., Job State). This document describes a specific service and uses
228   an XML schema to represent the objects and attributes. XML elements cannot have names with an embedded
229   whitespace. The names for objects and their attributes used by this specification are the names from the XML
230   Schema (e.g., JobState). The names can be easily mapped between the two specifications by inserting or
231   removing the whitespace in the name (e.g., Job State $\equiv$ JobState).

232

233   # 4   Requirements

234   ## 4.1   Rationale for the CopyService Specification

235   This specification is based on common requirements defined in the Multifunction Device Service Model
236   Requirements [MFDREQ]. In order to support common functionality for copying using multifunction devices, there
237   is a need to develop a semantic model and a set of abstract operations and elements for a CopyService. In order to
238   implement an abstract model of the operations and elements for a CopyService, there is need to map them onto
239   implementable applications and communication protocols that support interactions between Copy Clients and
240   CopyServices. There is a need to define a binding of the abstract model into Web Service Schema and Web
241   Service protocol stack.

242   ## 4.2   Out of Scope for CopyService

243   The basic CopyService model defined in this document is targeted to support enterprise Copy applications.
244   However this document does not specify any application specific semantics. The following are out of scope:

245   1.   Semantics of any compound service such as Copy-And-Email.

246   2.   Semantics of any workflow protocol, i.e., sequencing and coordination of CopyJobs across multiple
247   services.

248   3.   Semantics of any CopyService management operations for MFDs that are not network connected.

5   MFD Model Overview

See [PWG5108.01] for the MFD model. The CopyService fits within the MFD model as one of a number of
services that can be hosted on a multifunction device (i.e., System). The critical MFD container object with regard
to describing CopyService is Services.

One of the MFD's services is CopyService. There can be multiple instances of a CopyService hosted, each with its
own set of defaults and capabilities (e.g., separate Job queues).

The System has a SystemConfiguration object that contains all the subunits that comprise the MFD. Each
CopyService instance contains a service specific view of the subunits used by that service instance. The
CopyService element CopyServiceConfiguration contains the service specific view of the associated Subunits.

6   CopyService Model Overview

Figure 1 is the top level view of the CopyService schema.
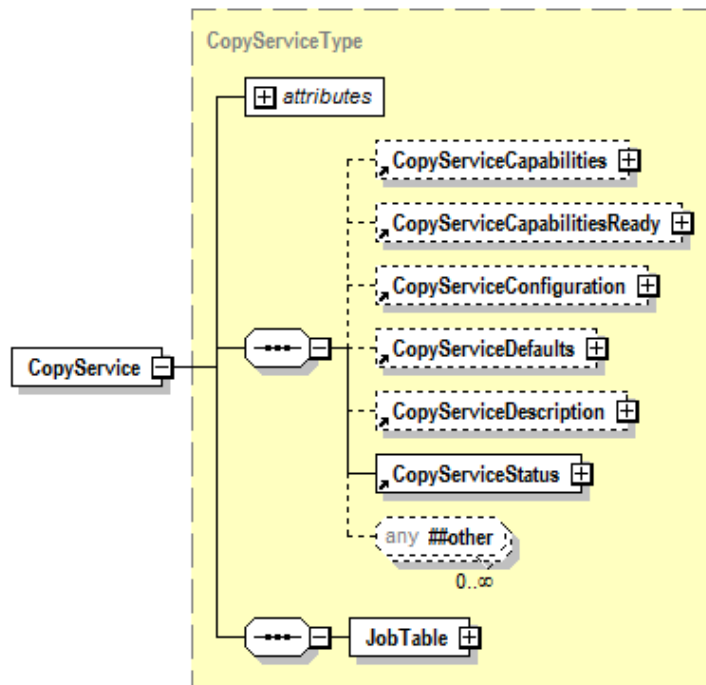
Figure 1 High Level CopyService Schema

The MFD System supports zero or more CopyServices. A CopyService is hosted locally on an MFD or remotely on
another computer. The CopyService model has an Active Job queue, a Job History and a set of elements which
includes CopyService status, configuration, description, defaults, and processing capabilities.

The CopyServiceCapabilities group element contains the CopyJobTicketCapabilities. The CopyJobTicketCapabilities
represents the allowed values supported by the CopyService for a CopyJobTicket.   The CopyJobTicketCapabilities
includes three sub elements. The CopyJobDescriptionCapabilities element indicates what job description elements are
supported by the service instance. The CopyDocumentProcessingCapabilities group element has all processing

273 elements for scanning the input Hardcopy Document and printing the output Hardcopy Document. The
274 CopyJobProcessingCapabilites group element includes all supported processing elements for CopyJobs. The details of
275 each processing element are specified in §6.1.

276 The CopyServiceCapabilitiesReady group element represents the allowed values for a CopyJobTicket that do not
277 require operator intervention (e.g., the media that is actually loaded in an input tray). The details are specified in §6.2

278 CopyServiceConfiguration provides a CopyService specific view into the Subunits that are associated with this service
279 instance. Only Subunits that are used by the CopyService will appear in this element. The details of each subunit are
280 detailed in §6.3. The System element provides an all-encompassing view of all
281 the Subunits of the MFD..

282 The CopyServiceDescription group element includes descriptive information such as service name and information,
283 and has extension point for vendor specific information. These description elements are settable by Administrators. The
284 details of the CopyServiceDescription elements are specified in §6.5.

285 The CopyServiceDefaults group element contains the DefaultCopyJobTicket. The DefaultCopyJobTicket contains the
286 CopyDescription, CopyJobProcessing and CopyDocumentProcessing default values. The values contained in
287 DefaultCopyJobTicket are the values that will be used by the CopyService when processing a CopyJobTicket which
288 does not specify a different value. The values for this are populated in an implementation specific manner. The details
289 of the DefaultCopyJobTicket are specified in §6.4

290 The CopyServiceStatus group element is an extension of SystemServiceStatus class that includes elements such as
291 ID, state, service counters, state messages and state reasons. State messages are localized state reasons. The only
292 CopyService specific status extensions are the CopyService specific counters. The details of the elements in the
293 CopyServiceStatus group are specified in §6.6.

294 A CopyService contains zero or more jobs. Since the input and output of a CopyService is a Hardcopy Document, there
295 is no document object to represent an implementation specific internal Digital Document. The CopyService does not
296 expose any Digital Document associated with a CopyJob. Therefore, each job has exactly zero documents. The
297 CopyService organizes its CopyJobs in a minimum of two job queues: (1) ActiveJobs, (2) JobHistory. ActiveJobs is a
298 queue maintaining a list of jobs that are pending or processing. The JobHistory queue maintains a log of CopyJobs that
299 have reached a terminating state (i.e., Completed, Aborted, and Canceled). The retention period for jobs in the
300 JobHistory list is implementation specific but MUST be at least 300 seconds.   Each CopyJob can contain a
301 CopyJobTicket which provides descriptive information as well as job processing and document processing instructions.
302 CopyJobProcessing instructions apply to the Job as a whole while CopyDocumentProcessing instructions specify
303 processing instructions applied to either the input or output Hardcopy Documents. The input processing semantics are
304 based on ScanService Semantics while the output processing semantics are based on PrintService Semantics.

305 **6.1   CopyServiceCapabilities**

306 The CopyServiceCapabilities is a container element containing CopyJobTicketCapabilities that provides information
307 about the elements that can be used in CopyJobTickets. The values of the elements in CopyJobTicketCapabilities
308 indicate all the supported values for a CopyJobTicket submitted to the CopyService instance (e.g., all the media
309 loaded in the InputTrays or available in nearby storage locations). The names of the elements within the
310 CopyJobTicketCapabilities are the same as those in the DefaultCopyJobTicket. See §7.3 for the names of
311 theCopyDocumentProcessingCapabilities (In and Out), CopyJobDescriptionCapabilities, and
312 CopyJobProcessingCapabilities elements.

313 Although most of the elements have the same name as their CopyJobTicket counterparts the syntax is often
314 different. For example an element such as InputSource that is a single keyword in CopyJobTicket, it is a sequence
315 of keywords in CopyServiceCapabilities. The values list the allowed values for the CopyJobTicket element. Some
316 elements that are of the data type integer in a CopyJobTicket are a range of integers in CopyJobTicketCapabilities.
317 Other elements that are simple strings or predefined ranges in the CopyJobTicket are simply boolean values in
318 CopyJobTicketCapabilities, indicating support for the associated CopyJobTicket elements. See [PWG5108.01] for
319 details on the syntax.

320

321
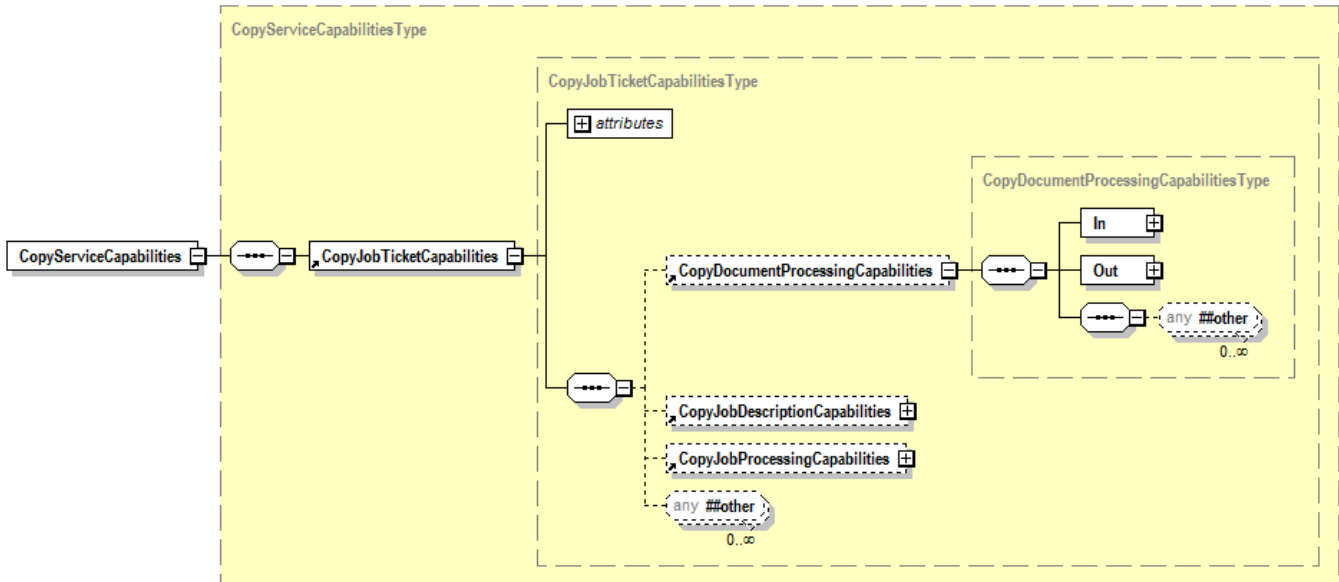
Figure 2 CopyServiceCapabilities

323

324   **Table 1 CopyServiceCapabilities**

Group	Elements described in [PWG5108.01]
CopyDocumentProcessingCapabilities (In)	NumberUp, PresentationDirectionNumberUp, AutoSkewCorrection, ColorEntry, ColorType, ContentType, Exposure, FilmScanMode, ImagesToTransfer, InputSource, Resolutions[1], Rotation, Scaling, DocumentSizeAutoDetect, ScanRegions, Sides
CopyDocumentProcessingCapabilities (Out)	NumberUp, PresentationDirectionNumberUp, Copies, CoverBack, CoverFront, FinishingsCol, Finishings, ForceFrontSide, ImpositionTemplate, InsertSheet, Media, MediaType, MediaColSupported[2], MediaInputTrayCheck, OrientationRequested, OutputBin, OutputDevice, Overrides, PageDelivery, , PagesPerSubset, PageRanges PrintContentOptimized, PrintColorMode, Quality, Resolutions[1], SeparatorSheets, SheetCollate, Sides, XImagePosition, XImageShift, XSide1ImageShift, XSide2ImageShift, YImagePosition, YImageShift, YSide1ImageShift, YSide2ImageShift,
CopyJobDescriptionCapabilities	ElementsNaturalLanguage, JobAccountingID, JobAccountingUserID, JobMandatoryElements, JobMessageFromOperator, JobMessageToOperator, JobMoreInfo JobName, JobOriginatingUserName, JobOriginatingUserUri, JobPassword, JobPasswordEncryption, KOctets, TemplateCreatorName, TemplateId, TemplateInfo, TemplateName, TemplateType
CopyJobProcessingCapabilities	JobDelayOutputUntil, JobDelayOutputUntilTime, JobHoldUntil, JobHoldUntilTime, JobMandatoryElements, JobPhoneNumber, JobPriority, JobRecipientName, BatchMode, JobAccountingSheets, JobCopies, JobCoverBack, JobCoverFront, JobErrorSheet, JobFinishings, JobFinishingsCol, JobSaveDisposition, JobSheetMessage, JobSheets, JobSheetsCol, MultipleSetOriginal, OutputBin, Overrides

325   [1] Resolution in the CopyJobTicket's CopyDocumentProcessing is a single instance of Resolution from the
326   sequence of Resolutions elements in CopyDocumentProcessingCapabilities. This applies to both In and
327   Out.

328   [2] MediaCol in the CopyJobTicket is a sequence (i.e., MediaColSupported) of MediaCol elements in
329   CopyDocumentProcessingCapabilities

330   **6.2   CopyServiceCapabilitiesReady**

331   CopyServiceCapabilitiesReady is a container element containing CopyJobTicketCapabilities that provides
332   information about the elements that can be used in CopyJobTickets. The values of the elements in
333   CopyJobTicketCapabilities indicate all the values for a CopyJobTicket that can be submitted to the CopyServer
334   instance and applied without operator intervention. (i.e., the Media currently loaded in the InputTrays) . The names
335   of the elements within CopyServiceCapabilitiesReady are the same as those in CopyServiceCapabilities. See §6.1
336   for the names of theCopyDocumentProcessingCapabilities (In and Out), CopyJobDescriptionCapabilities, and
337   CopyJobProcessingCapabilities elements.

338   **6.3   CopyServiceConfiguration**

339   The types of Subunits defined in the MFD Model and Common Semantics specification [PWG5108.01] that are
340   applicable to a CopyService are Console, Cover, Finisher, InputChannel, InputTray, Interface, Interpreter, Marker,
341   MediaPath, OutputChannel, OutputTray, Processor, ScanMediaPath, Scanner, Storage and optionally
342   VendorSubunits. There are no standard subunits unique to the CopyService

343

344

Figure 3 CopyServiceConfiguration

346

347
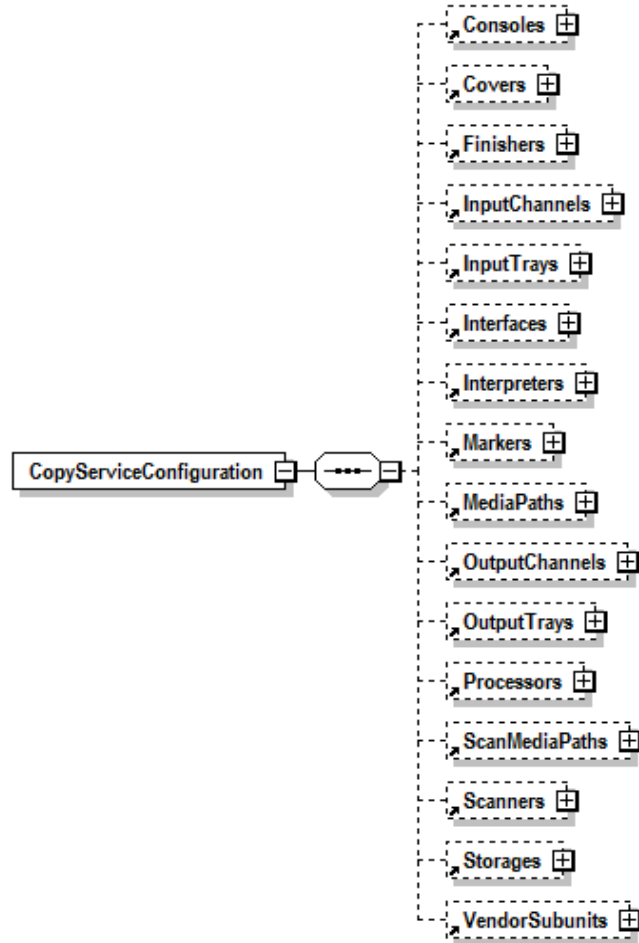
6.4   CopyServiceDefaults

The CopyServiceDefaults is a Container element. It contains the DefaultCopyJobTicket that provides the values
that will be used if the element is omitted in a CopyJob's CopyJobTicket. Note that the processing instructions are
not bound to the CopyJob until the CopyJob is actually processed. The values from DefaultCopyJobTicket are not
copied to the Job's CopyJobTicket. If CopyJobReceipt (See §7.1) is supported, the combined elements from the
user supplied CopyJobTicket and the applied values from the DefaultCopyJobTicket are copied to
CopyJobReceipt.

355

Figure 4 CopyServiceDefaults

356

357

358 For descriptions of the elements that comprise CopyJobDescription, CopyJobProcessing and
359 CopyDocumentProcessing see §7.3 on CopyJobTicket.

360 6.5 CopyServiceDescription

361 Figure 5 is a view of the CopyService's CopyServiceDescription.   CopyServiceDescription provide descriptive
362 information for the CopyService. The element values are administratively set.   The element values can be
363 modified directly or modified indirectly through an operation.

364
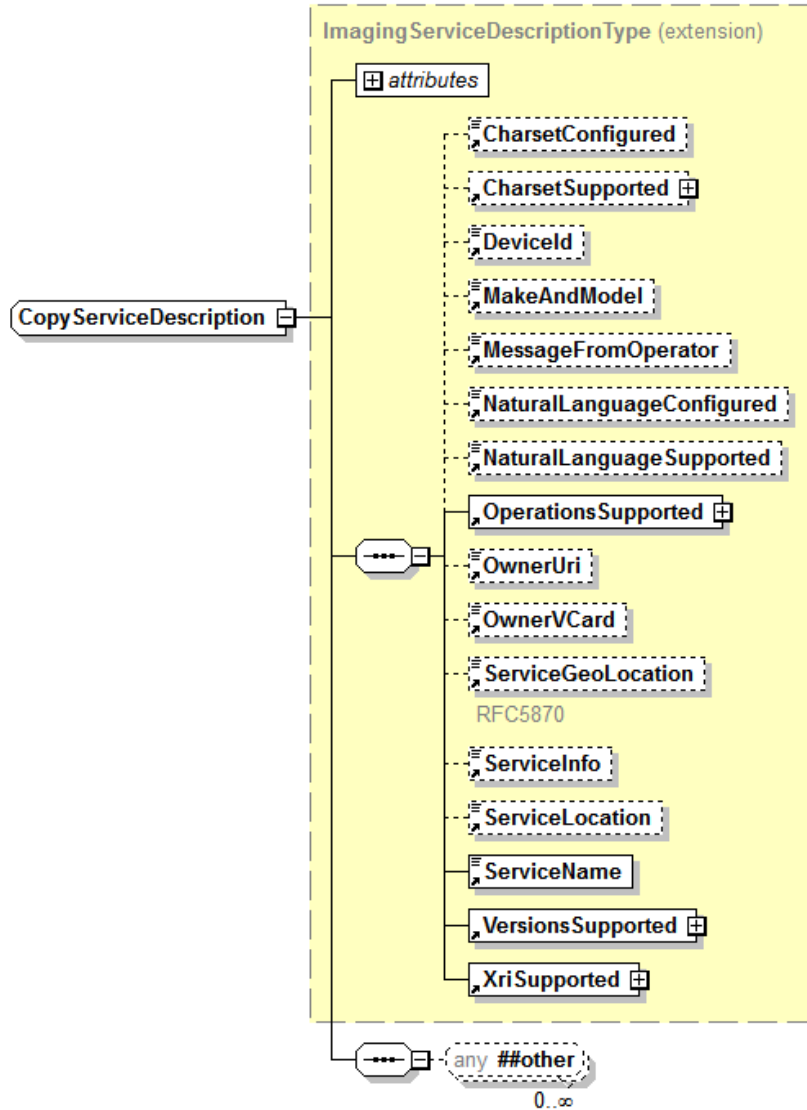
Figure 5 CopyServiceDescription

366

The elements common to all <service>ServiceDescriptions are described in the MFD Model and Common
Semantics specification [PWG5108.01]. Those elements are identified in Figure 5 by being included in the yellow
box. There are no elements specific to the CopyServiceDescription except the usual extension point (i.e., Any).

6.6   CopyServiceStatus

Figure 6 is a view of the CopyService's CopyServiceStatus. CopyServiceStatus provide state information for the
CopyService. The elements values are maintained by automata and cannot be directly set.   The element values
can be modified indirectly through an operation. For example PauseCopyService operation on the CopyService
may result in the change of the State and StateReasons elements.

375

376

Figure 6 CopyServiceStatus

378

379 The elements common to all <service>ServiceStatus are described in the MFD Model and Common Semantics
380 specification [PWG5108.01]. Those elements are identified in Figure 6 by being included in the yellow box. The
381 remaining elements are taken from <service> ServiceStatus. These elements are described in the MFD Model and
382 Common Semantics specification [PWG5108.01].

383 **7   CopyJob Model**

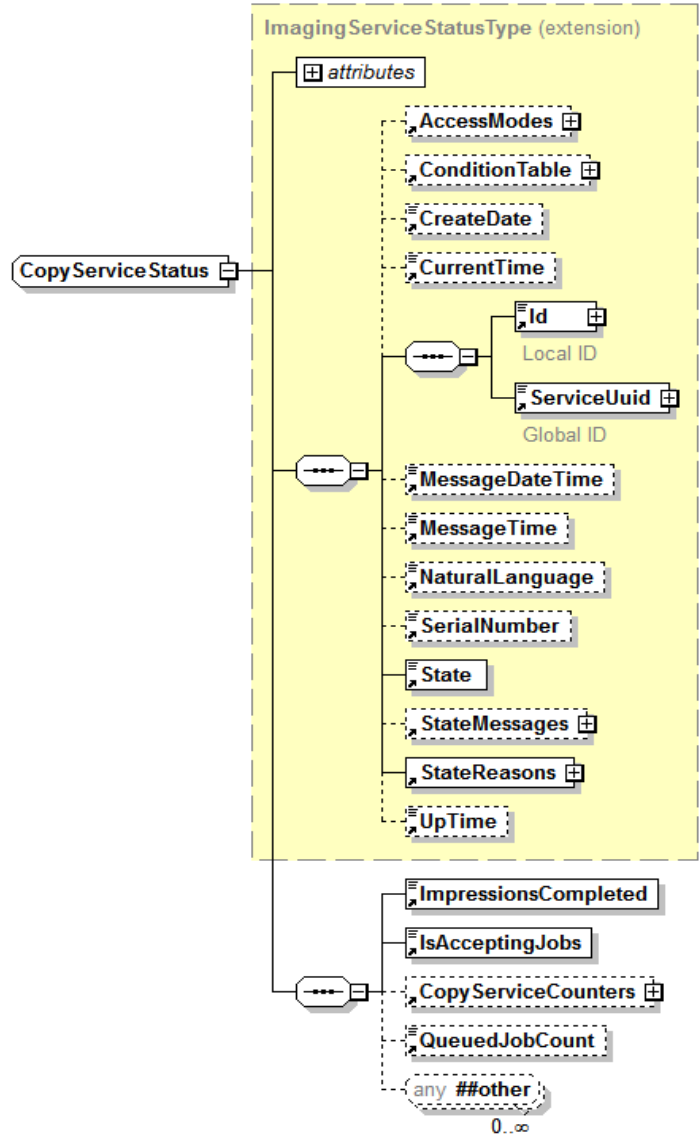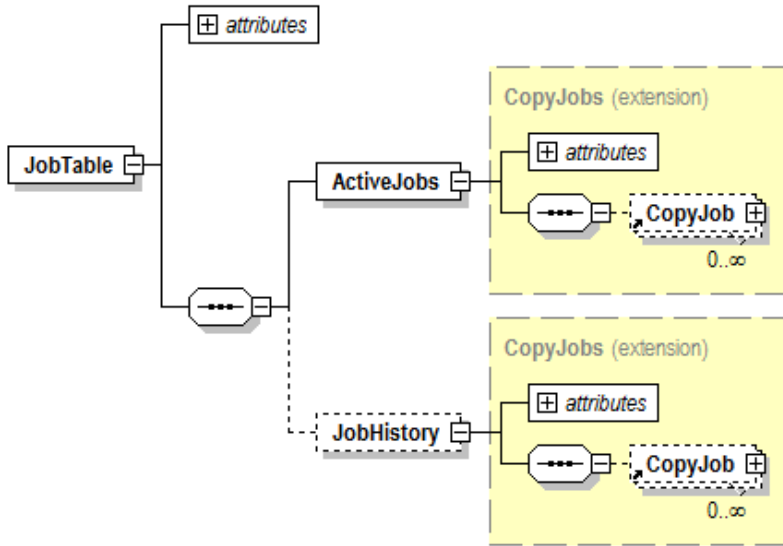384   Figure 7 is the top level view of CopyJob. The jobs appear in one of two lists. Pending and active jobs appear in
385   ActiveJobs. Jobs that have reached a terminal state (i.e., Completed, Aborted, and Canceled) appear in
386   JobHistory. The amount of time a Job is retained in the JobHistory is implementation specific but MUST be at least
387   300 seconds.

388

389   **Figure 7 JobTable**

390

391   As indicated in Figure 8 CopyJobs MUST contain zero documents. This is because the CopyService takes as input
392   a Hardcopy Document and produces a Hardcopy Document as output. Any internal digital document
393   representation is not visible to the User and is handled in an implementation specific manner.   The state of the job
394   is described in CopyJobStatus. CopyJobTicket contains descriptive information about the Job (i.e.,
395   CopyJobDescription) and processing instructions for the Job (i.e., CopyJobProcessing). CopyJobTicket also
396   contains document processing instructions (i.e., CopyDocumentProcessing). CopyDocumentProcessing are
397   broken into two sets. The Input set applies to image acquisition (i.e., scanning) and the Output set applies to the
398   production of the output Hardcopy Document (i.e., printing). CopyJobTicket represent the End User's intent while
399   CopyJobReceipt represent what the CopyService actually did.

Figure 8 High Level CopyJob View
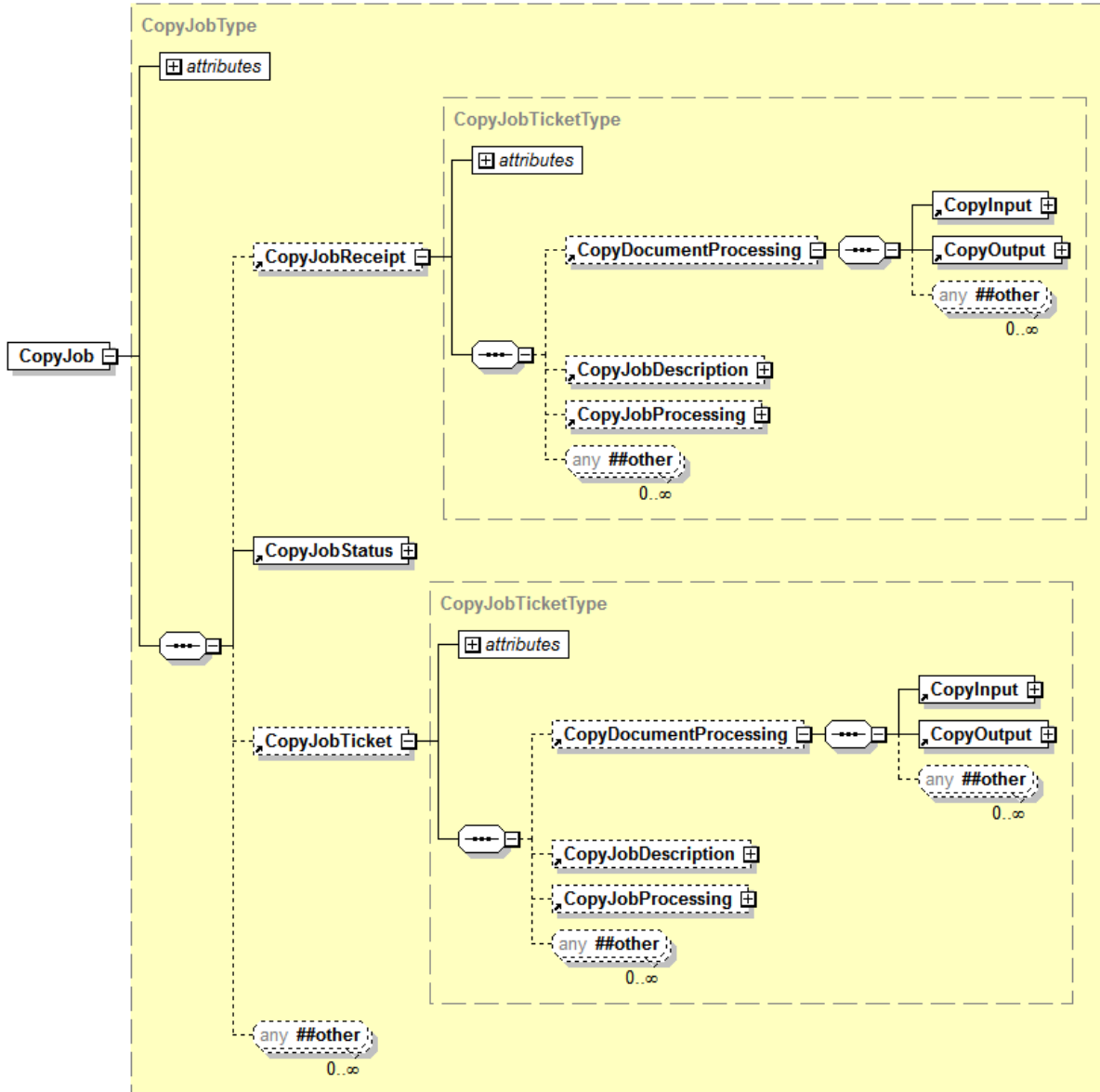
7.1   CopyJobReceipt

This element has exactly the same structure as CopyJobTicket. For each processing element of a CopyJob, it records the actual value used by the CopyService for processing the CopyJob. It contains the elements supplied by the Copy Client and applied to the job, any element or values substitutions made by the CopyService and any default elements or values applied by the CopyService. See §7.3 for element descriptions.

7.2   CopyJobStatus

Figure 9 is a view of the CopyJob's CopyJobStatus. CopyJobStatus provides state information for the CopyJob. The elements are maintained by automata and cannot be directly set.   The element values can be modified

412   indirectly through an operation. For example, CancelCopyJob operation on the CopyJob may result in the change
413   of the State and StateReasons elements.

414

415
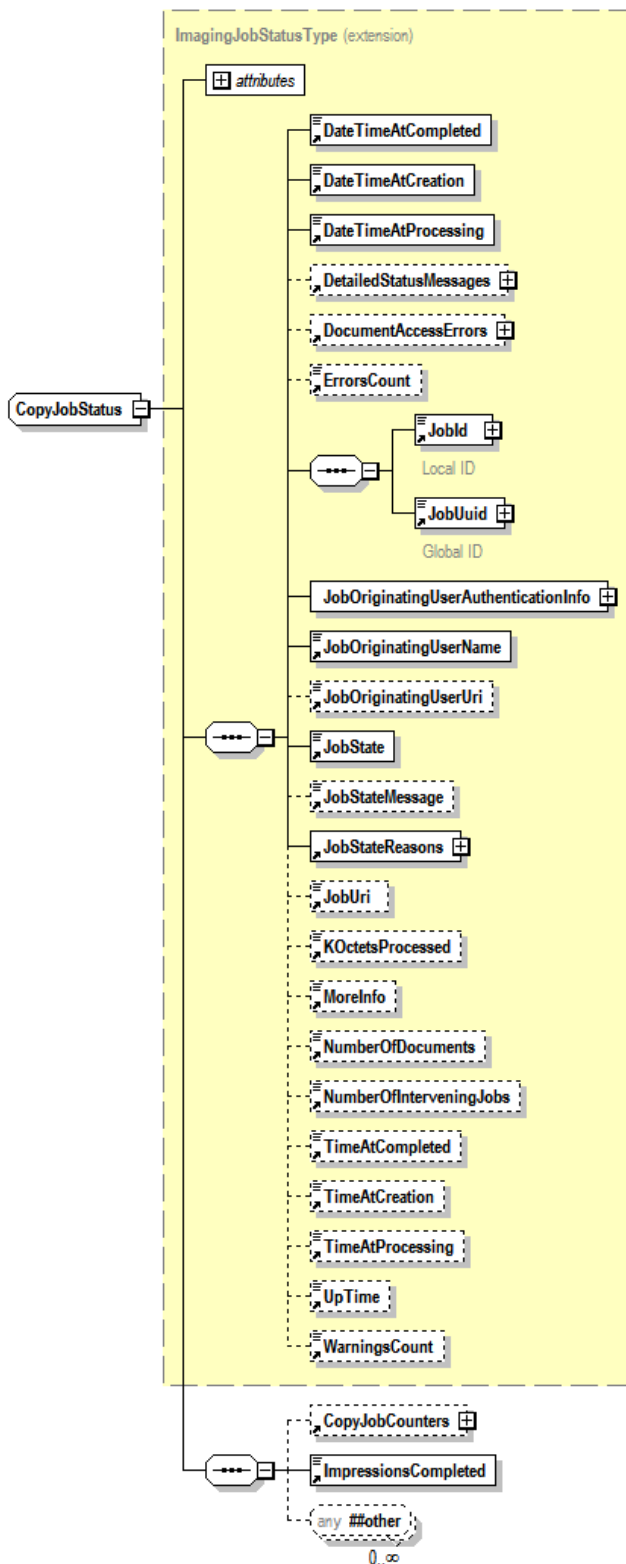
Figure 9 CopyJobStatus

416

417

418 The elements common to all <service>JobStatus are described in the MFD Model and Common Semantics
419 specification [PWG5108.01]. Those elements are identified in Figure 9 by being included in the yellow box. The
420 remaining elements are taken from <service>JobProcessing. These elements are described in the MFD Model and
421 Common Semantics specification [PWG5108.01].

422 7.3   CopyJobTicket

423 CopyJobTicket contains description and processing elements provided by the Copy Client during CopyJob
424 creation. This information is used by the CopyService during the processing of a CopyJob. This information is
425 made available to Copy Clients through the GetCopyJobElements operation.

426
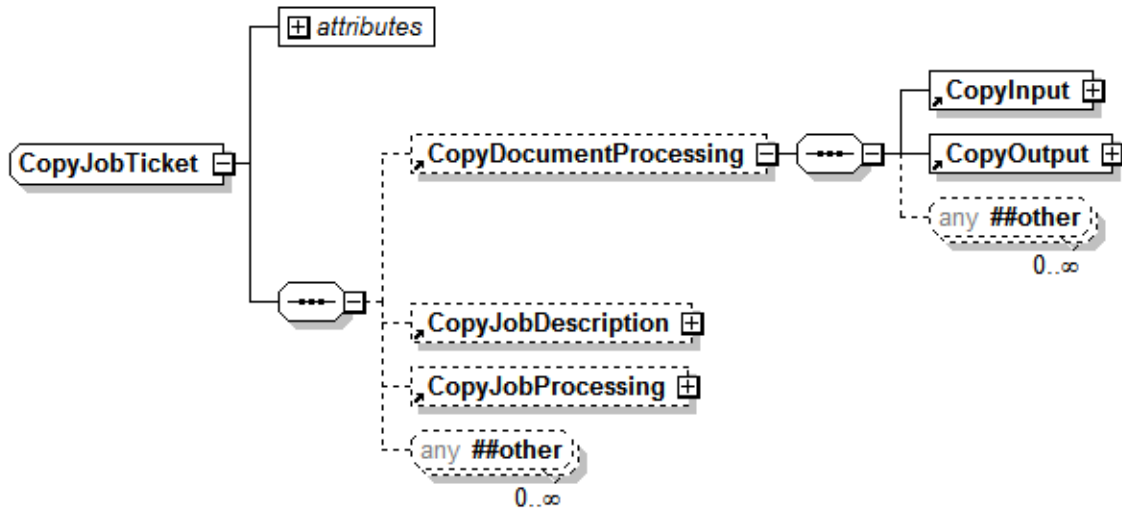
427

428   **Figure 10 CopyJobTicket**

429

430 7.3.1   CopyDocumentProcessing

431 CopyDocumentProcessing provides the document processing instructions that have been requested by the Copy
432 Client at the job level. Each element has a MustHonor attribute to indicate whether documents within the job must
433 be processed according to what the user has requested. The CopyDocumentProcessing instructions are broken
434 into two sets. The CopyInput set applies to image acquisition (i.e., scanning) and the CopyOutput set applies to the
435 production of the output Hardcopy Document (i.e., printing).

436

437
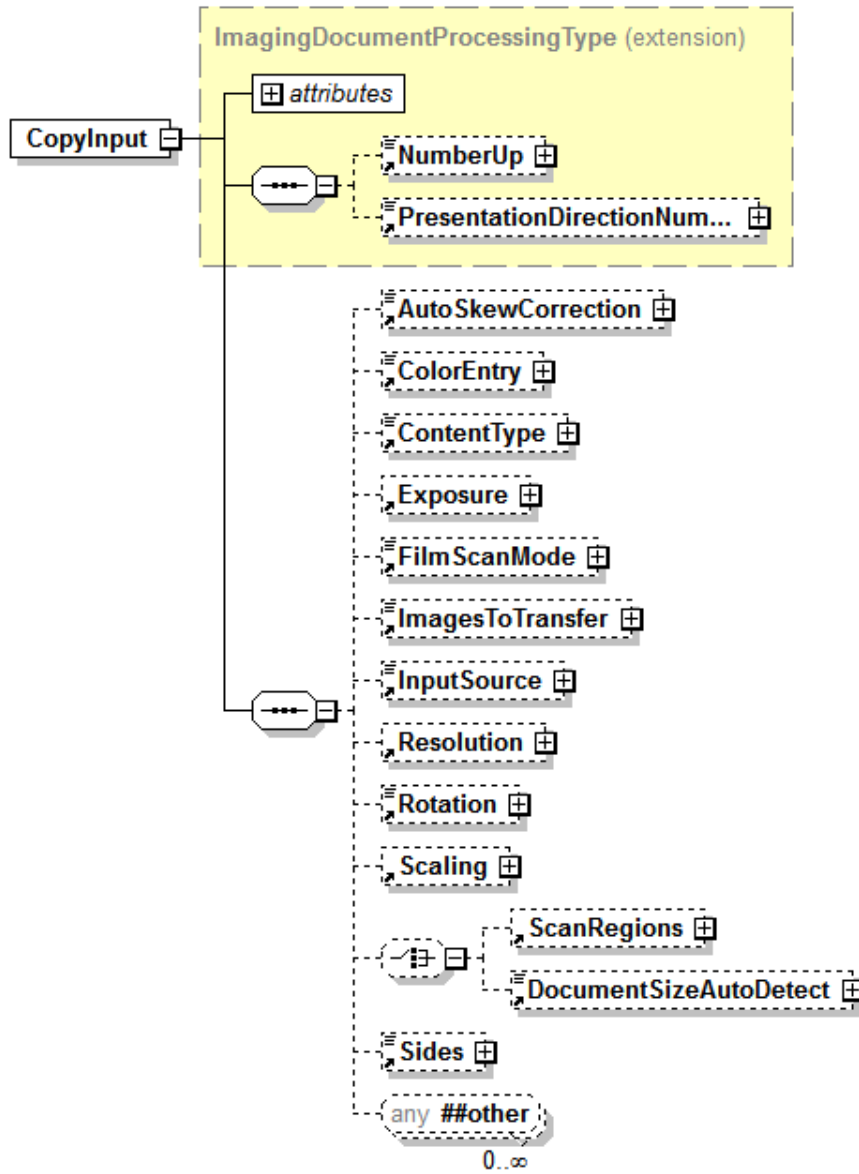
Figure 11 CopyDocumentProcessing (CopyInput)

439

440   The elements in the CopyInput set are a subset of the ScanDocumentProcessing element in the ScanService and
441   are described in the MFD Model and Common Semantics specification [PWG5108.01].

442
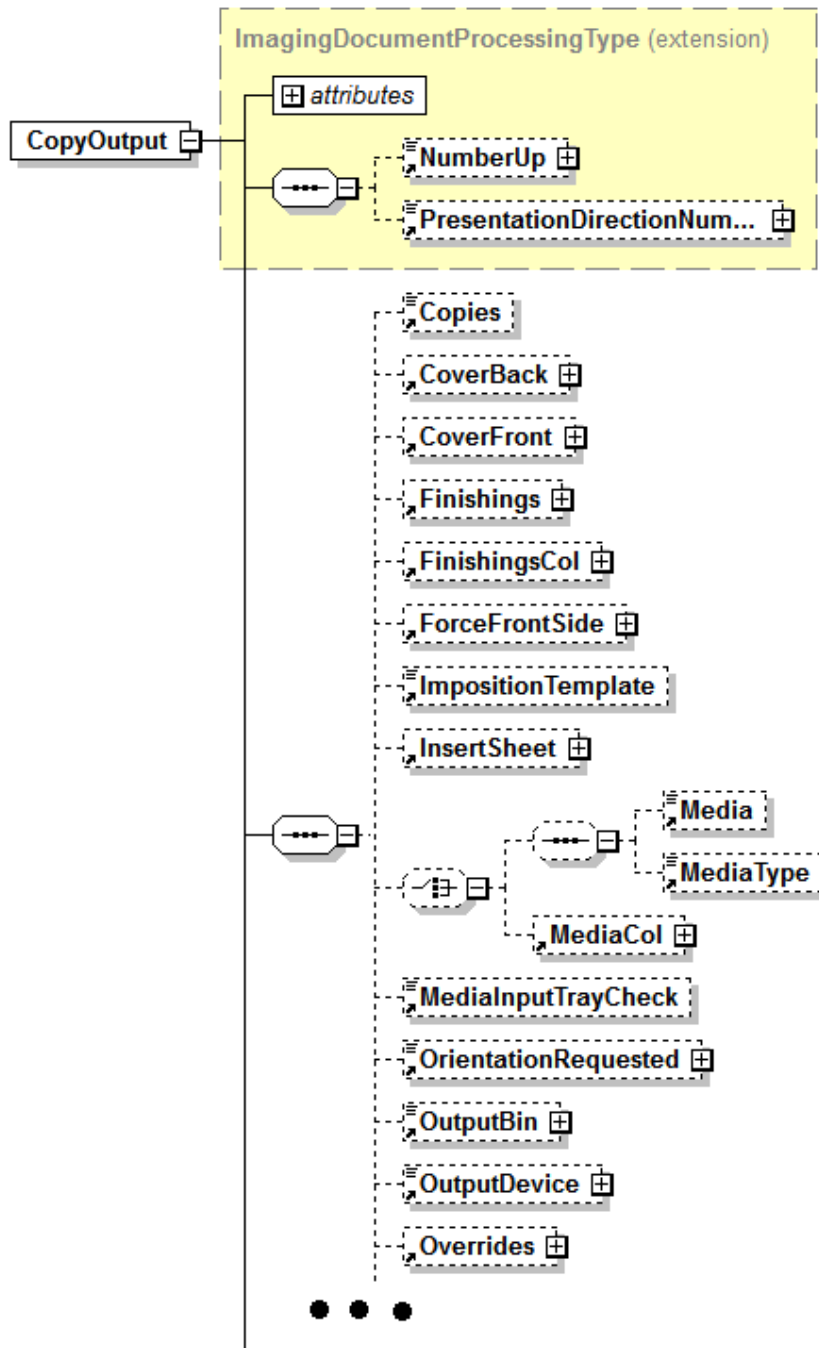
Figure 12 CopyDocumentProcessing (CopyOutput, Sheet 1)

443

444

445
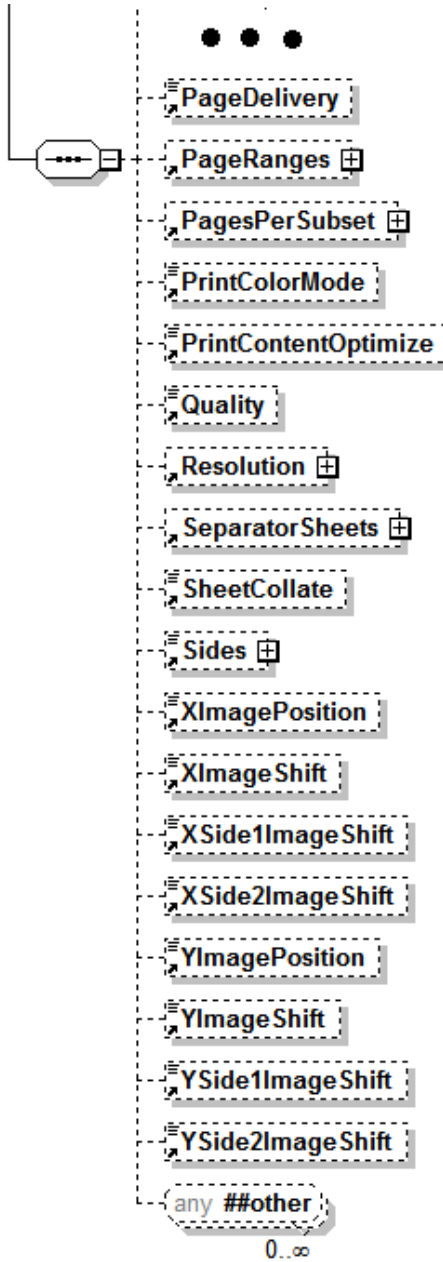
446

447   **Figure 13 CopyDocumentProcessing (CopyOutput, Sheet 2)**

448

449   The elements in the Output set are a subset of the PrintDocumentProcessing element in the PrintService and are
450   described in the MFD Model and Common Semantics specification [PWG5108.01].

7.3.2 CopyJobDescription

452   Figure 14 is a view of the CopyJob's CopyJobDescription . These elements are set by the Copy Client during job
453   creation.

454

455
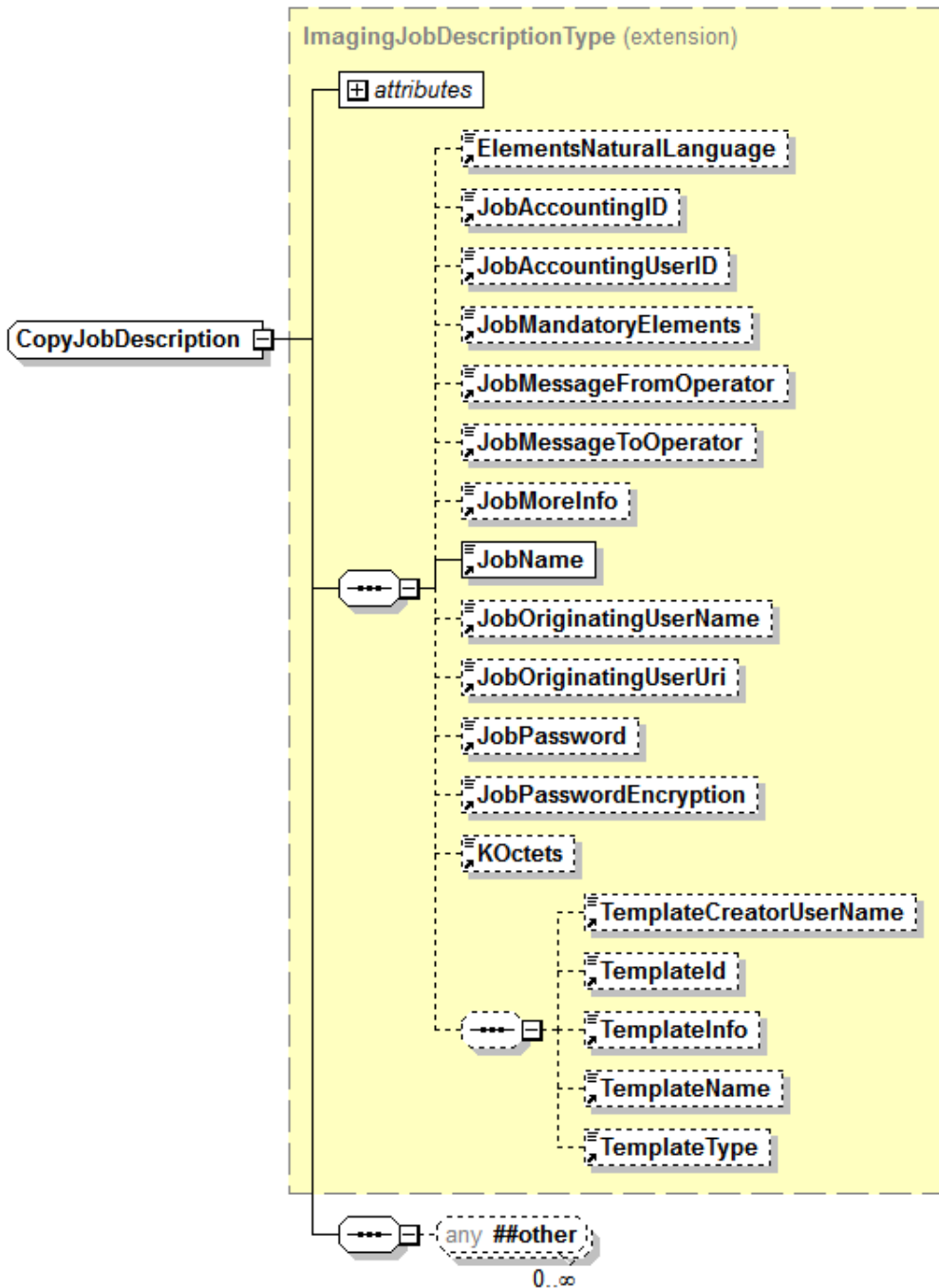
Figure 14 CopyJobDescription

456

457

458 The elements common to all <service>JobDescriptions are described in the MFD Model and Common Semantics
459 specification [PWG5108.01]. Those elements are identified in Figure 14 by being included in the yellow box. There
460 are no elements specific to the CopyJobDescription except the usual extension point (i.e., Any).

461 ### 7.3.3 CopyJobProcessing

462 CopyJobProcessing provides the job processing instructions that have been requested by the Copy Client. Each
463 element has a MustHonor attribute. When the value of MustHonor is true, the CopyService does not process the
464 job unless the element is supported; otherwise the CopyService processes the job with its best effort.

465

466
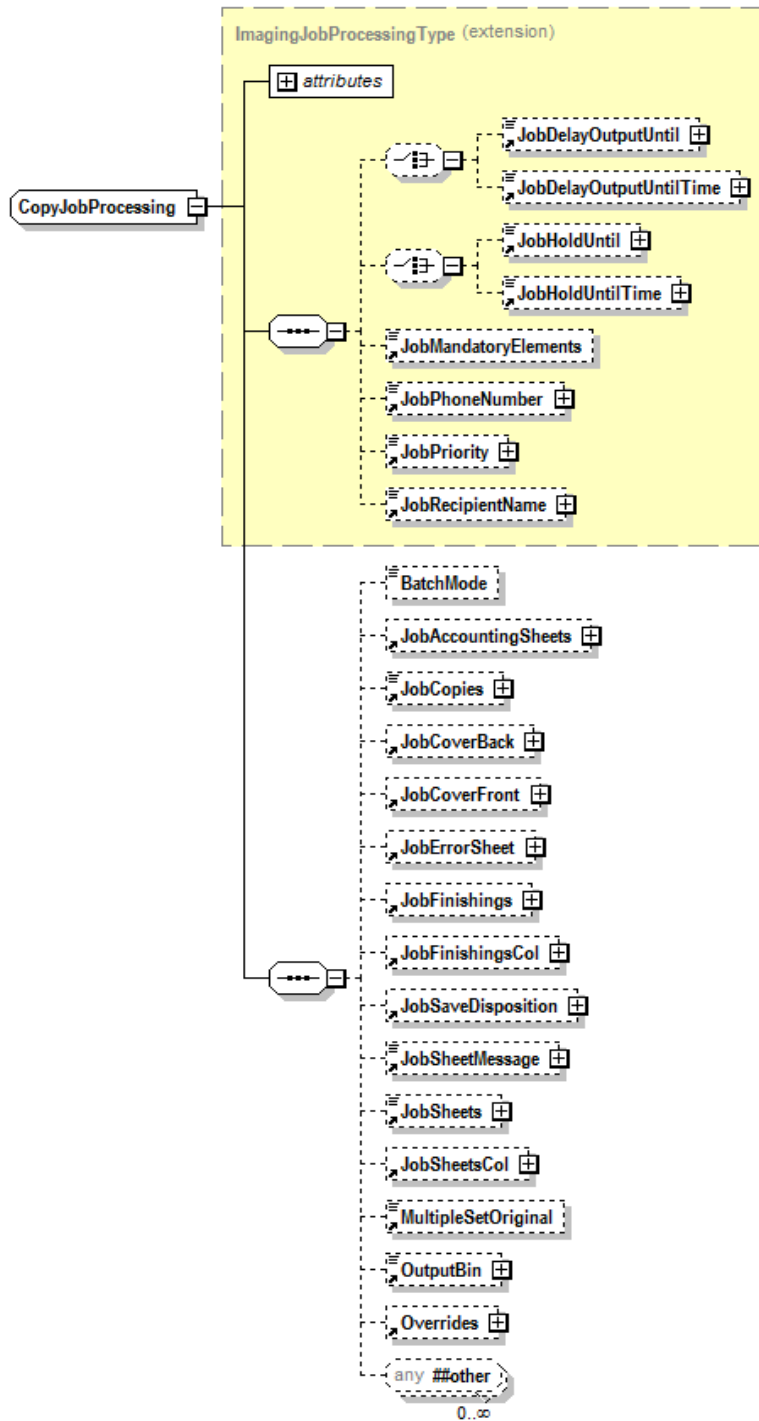
467 **Figure 15 CopyJobProcessing**

468

469 The elements common to all <service>JobProcessing are described in the MFD Model and Common Semantics
470 specification [PWG5108.01]. Those elements are identified in Figure 15 by being included in the yellow box. The
471 remaining elements are taken from PrintJobProcessing. These elements are described in the MFD Model and
472 Common Semantics specification [PWG5108.01].

473 **8   CopyService Theory of Operation**

474 The CopyService follows the behaviors and state transitions defined in the MFD Model and Common Semantics
475 specification [PWG5108.01].

476 **9   CopyService Interfaces**

477 The CopyService provides a set of service interfaces that is the same for a co-located local Copy Client or a
478 Remote Copy Client via a local interface, a local area network, or the Internet. A user makes a CopyService
479 request by interacting directly with the CopyService or indirectly through a local Copy Client via the MFD UI or a
480 Remote Copy Client via its software application UI.

481 The semantics for these operations are the same as the operations specified in the MFD Model and Common
482 Semantics specification [PWG5108.01]. The exception is that since the CopyService does not expose a document
483 no operations(e.g., SetCopyDocumentElements) or elements (e.g., CopyDocumentProcessing) associated with a
484 document object are applicable to this service. In Table 2 and Table 3 required parameters are in **bold** and
485 optional operations and parameters are in *italic* font.

486   **Table 2 Mandatory User Operations**

User Operation Name	Input Parameters	Output Parameters
CancelCopyJob	*ElementsNaturalLanguage*, **JobId,** *Message*, **RequestingUserName**	
CreateCopyJob	*CopyJobTicket*, *ElementsNaturalLanguage*, **RequestingUserName**	**JobId**, *UnsupportedElements*
GetActiveCopyJobs	*ElementsNaturalLanguageRequested*, *limit*, **RequestingUserName**	**ActiveJobs,** *ElementsNaturalLanguage*
GetCopyJobElements	*ElementsNaturalLanguageRequested*, **JobId**, *RequestedElements*, **RequestingUserName**	*CopyJobElements*, *ElementsNaturalLanguage*
GetCopyJobHistory	*ElementsNaturalLanguageRequested*, *limit*, **RequestingUserName**	**JobHistory,** *ElementsNaturalLanguage*
GetCopyServiceElements	*ElementsNaturalLanguageRequested*, *RequestedElements*, **RequestingUserName**	*CopyServiceElements*, *ElementsNaturalLanguage*
SetCopyJobElements	**CopyJobTicket, JobId,** *ElementsNaturalLanguage***,** *Message*, **RequestingUserName**	*UnsupportedElements*
ValidateCopyJobTicket	CopyJobTicket, ElementsNaturalLanguage, **RequestingUserName**	UnsupportedElements

487   **Table 3 Optional User Operations**

User Operation Name	Input Parameters	Output Parameters
CancelCurrentCopyJob	*ElementsNaturalLanguage***,** *JobIds***,** *Message*, **RequestingUserName**	

User Operation Name	Input Parameters	Output Parameters
CancelMyCopyJobs	*ElementsNaturalLanguage*, **JobId**, *Message*, **RequestingUserName**	*JobIds*
HoldCopyJob	*ElementsNaturalLanguage,* **JobId, JobHoldUntil | JobHoldUntilTime,** *Message*, **RequestingUserName**	
ReleaseCopyJob	*ElementsNaturalLanguage,* **JobId,** *Message*, **RequestingUserName**	
ResubmitCopyJob	*CopyJobTicket*, *ElementsNaturalLanguage*, **JobId**, **RequestingUserName**	**JobId**, *UnsupportedElements*
ResumeCopyJob	*ElementsNaturalLanguage,* **JobId,** *Message*, **RequestingUserName**	
SuspendCurrentCopyJob	ElementsNaturalLanguage, *JobId*, Message, **RequestingUserName**	

488   **Table 4 Administrative Operations**

Administrative Operation Name	Input Parameters	Output Parameters
CancelCopyJobs	*ElementsNaturalLanguage*, **JobIds,** *Message*, **RequestingUserName**	*JobIds*
DisableCopyService	*ElementsNaturalLanguage*, *Message*, **RequestingUserName**	
EnableCopyService	*ElementsNaturalLanguage*, *Message*, **RequestingUserName**	
HoldNewCopyJobs	*ElementsNaturalLanguage,* **JobHoldUntil | JobHoldUntilTime,** *Message*, **RequestingUserName**	
PauseCopyService	*ElementsNaturalLanguage, Message*, **RequestingUserName**	
PauseCopyServiceAfterCurrentJob	*ElementsNaturalLanguage, Message*, **RequestingUserName**	
PromoteCopyJob	*ElementsNaturalLanguage,* **JobId,** *Message*, *PredecessorJobId*, **RequestingUserName**	
ReleaseNewCopyJobs	*ElementsNaturalLanguage*, *Message*, **RequestingUserName**	
RestartCopyService	*ElementsNaturalLanguage*, **Id,** *IsAcceptingJobs*, *Message*, **RequestingUserName, ServiceType,** *StartServicePaused*	
ResumeCopyService	*ElementsNaturalLanguage*, *Message*, **RequestingUserName**	
SetCopyServiceElements	**CopyServiceElements,** *ElementsNaturalLanguage*, *Message*,	*UnsupportedElements*

Administrative Operation Name	Input Parameters	Output Parameters
	RequestingUserName	
ShutdownCopyService	*ElementsNaturalLanguage*, **Id**, *Message*, **RequestingUserName, ServiceType**	

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10 Conformance Requirements

This section describes conformance issues and requirements. This document introduces model entities such as objects, operations, elements, element syntaxes, and element values. These conformance sections describe the conformance requirements which apply to these model entities.

10.1 Client Conformance Requirements

A conforming Copy Client MUST support all REQUIRED operations as defined in this document. For each parameter included in an operation request, a conforming Copy Client MUST supply a value whose type and value syntax conforms to the requirements of the Model document as specified in Section 9. A conforming Copy Client MAY supply any extensions in an operation request, as long as they meet the requirements in Section 10.4.

When sending a request, a conforming Copy Client MAY supply any parameters that are indicated as OPTIONALLY supplied by the client.

A Copy Client MUST be able to accept any of the elements defined in the model, including their full range that may be returned to it in a response from a Copy Service

 An operation response may contain elements and/or values that the Copy Client does not expect. Therefore, a Copy Client implementation MUST gracefully handle such responses and not refuse to interoperate with a conforming Copy Service that is returning extended elements and/or values that conform to Section 10.4 . Clients MUST to ignore any parameters, elements, or values that they do not understand.

10.2 Copy Service Conformance Requirements

This section specifies the conformance requirements for conforming implementations with respect to objects, operations, and attributes.

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10.2.1 Objects

Conforming implementations MUST implement all of the model objects and the mandatory elements they contain as defined in this specification in the indicated sections:

Section 6 - CopyService

Section 7 - CopyJob

10.2.2 Operations

Conforming Copy Service implementations MUST implement all of the REQUIRED model operations, including REQUIRED responses, as defined in this specification in section 9:

CancelCopyJob   GetActiveCopyJobs   GetCopyServiceElements

CreateCopyJob   GetCopyJobHistory   GetCopyJobElements

ValidateCopyJobTicket

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521 Conforming Copy Service MUST support all REQUIRED operation elements and all values of such elements if so
522 indicated in the description. Conforming Copy Service MUST ignore all unsupported or unknown operation
523 elements received in a request, but MUST reject a CreateCopyJob request that contains an unknown element that
524 contains the MustHonor attribute with a value of 'true'.

525 **10.2.3 3 Job History**

526 Conforming CopyService implementations MUST retain every Job in the JobHistory for at least 300 seconds (see
527 section 7).

528 **10.3 Copy Service Elements**

529 Conforming Copy Service MUST support all of the REQUIRED object elements, as defined in this specification.

530 If an object supports an element, it MUST support only those values specified in this document or through the
531 extension mechanism described in section 10.4. It MAY support any non-empty subset of these values. That is, it
532 MUST support at least one of the specified values and at most all of them.

533 **10.4 Extensions**

534 Conforming Copy Service MAY support extensions. To extend the model the extensions MUST be fully qualified.
535 The qualified name MUST NOT be in the PWG target namespace. When extending the model with new elements
536 the new elements MUST be added at the extension points at the end of the associated sequence of elements.
537 Extended values for elements MUST conform to the extension patterns defined in the element schema.
538 Implementers are free to add vendor specific operations to the service.

539 **11 PWG Registration Considerations**

540 This specification abides by the guidelines set forth in the MFD Model and Common Semantics specification
541 [PWG5108.01] (section 10).

542 **12 Internalization Considerations**

543 This specification abides by the guidelines set forth in the MFD Model and Common Semantics specification
544 [PWG5108.01] (section 11).

545 **13 Security Considerations**

546 This specification abides by the guidelines set forth in the MFD Model and Common Semantics specification
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548 **14 References**

549 **14.1 Normative References**

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569   14.2 Informative References

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576   15 Author's Address

577   Peter Zehler

578   Xerox Research Center Webster

579   Email: Peter.Zehler@Xerox.com

580   Voice: (585) 265-8755

581   Fax: (585) 265-7441

582   US Mail: Peter Zehler

583   Xerox Corp.

584   800 Phillips Rd.

585   M/S 128-25E

586   Webster NY, 14580-9701

587

588

589   Additional contributors:

590   Nancy Chen – OkiData

591   Lee Farrell

592   Ira McDonald – High North

593   Bill Wagner – TIC

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