

1 **PWG MFD Working Group Face-to-Face Meeting Minutes**
2 **At Microsoft, Redmond, WA**
3 **August 19-20, 2009**
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5 **August 19 Wednesday Meeting –**
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7 **1. Attendees:**

8	Nancy Chen,	Okidata
9	Lee Farrell,	Canon
10	Mike Fenelon,	Microsoft
11	Rick Landau,	Dell
12	Harry Lewis,	InfoPrint
13	Jane Maliouta,	Microsoft
14	Ira McDonald*,	High North Inc.
15	Joe Murdock,	Sharp
16	Jerry Thrasher,	Lexmark
17	Randy Turner,	Amalfi Systems
18	Bill Wagner,	TIC
19	Craig Whittle,	Sharp
20	Peter Zehler,	Xerox

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22 *Phone-in attendee
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24 **2. Introduction & PWG IP Policy :**

25 The MFD Working Group Chairman Peter Zehler reminded attendees the meeting is being
26 conducted in accord with the PWG IP policy. No objection.
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28 **3. Minutes Taker Assigned: Nancy Chen**
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30 **4. Agenda:**

31 The agenda has been adjusted as shown below:

- 32 ■ Introductions, Assign Minute Taker(s)
 - 33 ■ MediaSizeNameExtensionPattern issue
 - 34 ■ Schema changes review & discussion
 - 35 ■ MFD Overall Document Discussion
 - 36 ○ Purpose and scope of specification
 - 37 ○ Relationship to remaining Service Specifications
 - 38 ○ System element discussion
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40 **5. MediaSizeNameExtensionPattern Issue**

- 41 ■ Peter Zehler reported that the MediaSizeNameExtensionPattern was not correct in MFD
42 XML Schema. Pete added Norbert's correction, but the old pattern was not deleted which
43 caused problem for Norbert Schade's driver. Pete asked for deletion of the two old incorrect
44 extension patterns if there is no backward compatibility issue. There was no objection for the
45 deletion.

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- Pete noted that these patterns are not the same as the patterns in WS-Print. Pete and Mike will investigate. If the two are not the same, Pete will add the pattern in WS-Print into MFD Schema.

50 6. MFD Schema Changes Review & Discussion

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- Pete presented the recent changes to the MFD XML Schema for discussion.
 - The root of the Schema has been changed from 'Server' to an active entity "System" which represents the MFD as a whole.
 - SystemConfiguration contains all Subunits defined in the model, represents any subunit that can be utilized in any service.
 - Each service now has a service-specific view of only the subunits applicable to the service, instead of all possible subunits.
 - Pete will make sure the posted Schema is up-to-date from the changes agreed in the previous teleconferences. The latest version today is version 81.
 - Other changes are to SystemStatus, and SystemDescription. Previously these are inherited from the Imaging class.
 - No change to Managers, Agents, and Devices.
 - That the current model of Services does not quite match with the definition in the specification was discussed. Nancy recommended to model the Services element as a sequence of Service elements, each is a choice of one of the Print, Scan, Copy, Fax, ... type of services. Pete explained that although this is more correct in terms of object oriented modeling, but this incurs adding of an empty wrapper "Service" for each instance of individual service type. Mike pointed out that the current model in Schema implies a fixed order of service instances in service type; whereas a sequence of service instances, each of a selected service type can be added without an implied order. Pete noted that however the current structure (ordered sequence) allows an extension point to be added for vendor's extension. Adding an extension point to a choice of service types would result in a non-deterministic schema error in XML. An alternative is to add an extension point outside the unordered set, but it is simpler to add the extension point to an ordered sequence. No further explanation to the complexity of the alternative structure. But the decision was not to change the current model.

78 7. MFD Overall Specification Discussion

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- **Purpose and scope of specification**
 - Pete would like to define the common terminologies, concepts, elements, descriptions that would otherwise need to be repeated in each individual service without the Overall spec. Another purpose is to describe how the individual service fit within the framework of MFD.
 - Bill's question: "Should the purpose and scope be describing the System element that represents the MFD instead" was discussed.
 - Ira: We need both specifications of the System object and common core elements and operations for services. There may be need for two separate documents.
 - Pete would like to be able to retrieve counters and access alert tables of the overall MFD system from MFD management perspectives, keeping system wide operations to the System object for monitoring purpose.
 - **MFD Overall Specification and System Specification**

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- We discussed which sections of the current Overall document should belong to the new MFD overall document, which sections should belong to the new System document. The following conclusions were reached:
 - 1. Overall specification :
 - Include the following sections from the current Overall document:
 - Terminology – add references to general terminologies.
 - The nomenclature of <xxx> should be explained at the beginning of the table.
 - MFD Model Concepts (all subsections)
 - Functional Overview of MFD
 - Need Pete’s update to Figure 1.
 - Jobs, documents, Tickets, and Templates
 - Template description should merge with Job and Job Lifecycle descriptions
 - Contents Regions, and Images
 - Content regions are also described in two different sections. Need update.
 - Coordinate Systems
 - Datatypes
 - The System
 - System Model
 - MFD Services
 - Service Document Interfaces
 - SystemConfiguration - Subunits
 - SystemDescription
 - Both SystemDescription and SystemStatus should only be a short paragraph describing what this group element does in general. SystemDescriptions are elements that can only be set by administrators according to System policy. SystemStatus are elements maintained by automata related to the System. Individual elements should be described in “System” document.
 - AvailableResource and ResourcesSupported
 - OperationsSupported
 - System Operations should be moved to “System” object description.
 - SystemStatus
 - Provide a brief top level definition
 - Sub-elements should be moved to System object description.
 - Insert a “System State Roll-up Rules” title for the paragraph describing the rules.
 - Managers, Agents, Devices
 - Contents from WIMS spec with references.
 - Service Model Components
 - Split each of the tables into two sections: Base class elements, service-specific elements.
 - Imaging Job Model

- 137 • Document Model
- 138 • Service Theory of Operation
- 139 2. System object specification:
- 140 Include the following sections from the current Overall document:
- 141 • The System
- 142 ▪ OperationsSupported
- 143 ▪ Covers the operations that affect the model
- 144 ▪ SystemDescription : description of sub-elements
- 145 ▪ SystemStatus : description of sub-elements
- 146 ▪ Managers, Agents, and Devices – should provide references to WIMS.
- 147 ▪ System Operations for managing the services (e.g. start up, shutdown
- 148 services)
- 149 ○ Bill volunteered to create the first draft of both the MFD Overall Document and the MFD
- 150 System Object Document.

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152 **August 20 Thursday Meeting –**

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154 **1. Attendees:**

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|-----|-----------------|-----------------|
| 155 | Nancy Chen, | Okidata |
| 156 | Lee Farrell, | Canon |
| 157 | Mike Fenelon, | Microsoft |
| 158 | Harry Lewis, | InfoPrint |
| 159 | Jane Maliouta, | Microsoft |
| 160 | Ira McDonald*, | High North Inc. |
| 161 | Joe Murdock, | Sharp |
| 162 | Jerry Thrasher, | Lexmark |
| 163 | Bill Wagner, | TIC |
| 164 | Craig Whittle, | Sharp |
| 165 | Peter Zehler, | Xerox |

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*Phone-in attendee

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169 **2. Introduction & PWG IP Policy :**

170 The MFD Working Group Chairman Peter Zehler reminded attendees the meeting is being

171 conducted in accord with the PWG IP policy. No objection.

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173 **3. Minutes Taker Assigned: Nancy Chen**

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175 **4. A Brief Note on FaxOut Service Implementation at Xerox**

- 176 ▪ Pete said Xerox's implementation of the PWG FaxOut Service supports jobs that may have
- 177 multiple destinations. Even when faxing out to one of the destinations failed, the job still goes to
- 178 completion; but there are job state reasons allowing the specification of completion with error or
- 179 successfully. Each FaxOut job has log records allowing users to find out which one of the
- 180 FaxOut job destinations has failed with what reason.
- 181 ▪ Pete is still looking for members' inputs on the set of right attributes for the fax modem element.

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183 **5. Proposed Copy Service Model XML Schema Review**

184 Pete provided a walk-through of the XML Schema of the proposed straw-man Copy Service model.

- 185 ▪ The following Copy Service operations are available:
- 186 ○ CancelCopyJob – cancel a copy job
 - 187 ○ CreateCopyJob – create a copy job
 - 188 ○ GetActiveCopyJobs – get a list of active copy jobs
 - 189 ○ GetCopyJobElements – get the attributes of a copy job
 - 190 ○ GetCopyJobHistory – get a list of completed copy jobs
 - 191 ○ GetCopyServiceElements – get the attributes of copy service
 - 192 ○ ValidateCopyJob – validate the ticket for a copy job
 - 193 ○ DisableCopyService – disable input for copy service
 - 194 ○ EnableCopyService – enable input for copy service
 - 195 ○ PauseCopyService – stop output for copy service
 - 196 ○ PauseCopyServiceAfterCurrentJob
 - 197 ○ ResumeCopyService – resume output for copy service
 - 198 ○ HoldCopyJob
 - 199 ○ ReleaseCopyJob
 - 200 ○ HoldNewCopyJob
 - 201 ○ ReleaseNewCopyJob
 - 202 ○ ShutdownCopyService
 - 203 ○ StartupCopyService
 - 204 ○ RestartCopyService
- 205 ▪ There is no ‘Add Multiple Document’ operation – same as Scan Service
- 206 ▪ For creating a copy job, there are two sets of document processing instructions: one set for
- 207 controlling the input (scanning) of hardcopy document, the other for controlling the output of
- 208 hardcopy document. This is to resolve the conflict in specifying “sides” and resolution when one
- 209 needs to input two-sided document with one kind of resolution, and output (print) single-sided
- 210 document with different resolution or vice versa. Therefore in the Schema of copy job ticket,
- 211 CopyDocumentProcessing has “Input” and “Output” elements of document processing
- 212 instructions. “input” elements are the same as for scan documents processing, “output” elements
- 213 are the same as for print document processing.
- 214 ▪ AI: change “Input” to “InputDocumentProcessing” and “Output” to
- 215 “OutputDocumentProcessing” for clarity.
- 216 ▪ CopyJobDescription and CopyJobProcessing are the same as those in other services.
- 217 CopyJobProcessing also has input and output side of processing instructions. Like Scan Service,
- 218 CopyJobProcessing allows multiple set of originals that allow the use of local UI to construct the
- 219 full set of input-output document cardinality types: SDSF, SDMF, MDSF, MDMF. Xerox’s
- 220 devices perform some internal scan-to-print imaging path optimization, these are not adjustable
- 221 by external users.
- 222 ▪ CopyServiceConfiguration is the union of Print and Scan subunits
- 223 ▪ All the services have a DeviceId in ServiceDescription that allow a user to get the P1284
- 224 identification of the MFD device when communicating with the service. It is not the Id for the
- 225 service.
- 226 ▪ The current schema has ServiceUriSupported and XriSupported. Each Xri Supported element has
- 227 three elements: Uri, Authentication, Security. Pete would like to deprecate ServiceUriSupported.
- 228 No objection.

- 229 ○ AI: Remove ServiceUriSupported, rename XriSupported as ServiceXriSupported, and
230 rename XriUri element in ServiceXriSupported as Uri in all services.
- 231 ▪ CopyServiceStatus is the same as other service status, has an Id that identifies the service
232 instance and is the key. Copy counters are included in the status.
- 233 ▪ Ira reported that in the MIB the copy counter must include both imaging and impression counts,
234 these two counts may not be the same when multiple copies are made. The definition of copy
235 counts in the PWG Counter spec does not include imaging counts. Xerox devices only count
236 impressions. Consensus: only impressions will be counted. Make a note that input images are not
237 required to be counted.
- 238 ▪ The InputKOctets is defined as the raw size of scanned image. Ira said this was defined in printer
239 MIB and Counter spec as the raw traffic counter of the protocol packet over the job input
240 channels, not the data size of the document submitted as the job data. In counter spec it is defined
241 as the data amount received by the service in integral increment of 1024 octets, not channel
242 specific – sounds like the size of the raw scan image; it could also be the size of the job ticket
243 received on a logical input channel. Therefore it could be interpreted as in ‘Push Print’ it counts
244 the job ticket and document data received; in ‘Pull Print’ it counts the referenced document data
245 received. However, Ira who is the original editor of the MIB spec clarified that the definition of
246 the counter is the job input data size over the job input channel; therefore for ‘Pull Print’ it
247 should count the job ticket size over the job input channel, not the referenced document data size
248 received over the job data channel. It was also recognized that no matter how the counter was
249 defined in the previous specifications, the value of counting the traffic data size and job
250 document data size should be determined in finalizing the definition of this counter. Ira
251 maintained that the author of the Counter spec erroneously redefined this counter from the MIB
252 spec, if the definition in the Counter spec is desired, it should be rename as a different counter.
253 The behavior of the same counter name should be consistent with what’s defined in MIB spec.
254 Since the change of this counter definition will break the existing software that is implemented
255 according to the MIB spec, such as what has implemented in the existing Samsung products, and
256 also impact future implementations of the counter in all services, we agreed to raise the
257 definition of this counter as an issue to be resolved further.
- 258 ▪ Ira also maintained that both InputKOctets and OutputKOctets are for counting the size of job
259 input and output protocol messages. OutputKOctets is for the case if the chaining of servers
260 exists, the service is sending the output data to other servers. If no chaining of servers,
261 OutputKOctets never applies. If other counters are desired, Ira is happy to add another counter
262 name and definition, but he maintained that the definition of the existing counters must not be
263 changed. However some of us value the counter for input and output job document data sizes for
264 the purpose of charging, not for measuring the protocol message sizes.
- 265 ▪ AI: Since a copy service is an integrated scan and print service, so according to the MIB spec,
266 OutputKOctets would not apply. Pete will remove OutputKOctets from the Copy Service.
- 267 ▪ AI: Address the issue of clarifying the definitions of InputKOctets in the WIMS working group
268 meetings.
- 269 ▪ WorkTotals counter right now captures the impressions produced for the Copy Service.
- 270 ▪ We discussed the value of including images in addition to the impression counts in the counters.
271 Count of images allow you to measure the wear of scanning unit for maintenance purpose in fleet
272 management; although that is captured in the scanner subunit counter, image count should be
273 considered if there are customers desire to use it for charging purpose. Xerox currently covers
274 this charge in the different pricing of copy counts vs. the print page counts. Scanner subunit

275 counter can not distinguish the scan counts for Copy vs. Scan or Fax, .if a customer desire to
276 adjust the cost for Copy vs. Scan, then there is a value to know the image count for Copy. In that
277 case, an implementation can always add the desired counter in CopyServiceCounters, or in the
278 Scanner Subunit counter.
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280 6. MFD System Level Operations Review and Discussion

- 281 ▪ Pete showed the WSDL definition of the MFD system level endpoint operations
- 282 ▪ Enable/DisableAllMFDServices - enable and disable all services at once
- 283 ▪ Enable/DisableMFDSERVICE – enable and disable a particular service
- 284 ▪ Pause/ResumeAllMFDServices - pause and resume all MFD services at once
- 285 ▪ Pause/ResumeMFDSERVICE – pause and resume a particular MFD service
- 286 ▪ GetMFDSERVICEElements – get system status, system description elements
- 287 ▪ The naming of MFD Services as opposed to System Services was discussed. In XML Schema,
288 we named ‘System’ as the root of the MFD, however using the name ‘System Service’ is
289 confusing because ‘Services’ is a sub-element under ‘System’, hence ‘System’ is not a service.
290 The name ‘MFD Services’ is as confusing, since the communication is addressing to the System
291 object. In the previous MFD conference calls, we agreed to make System distinct from
292 ‘Services’, hence ‘System Service’ should not be used.
- 293 ▪ AI: We agreed to the operations rename as the followings:
 - 294 ○ Enable/DisableAllServices
 - 295 ○ Enable/DisableService – for a specific service
 - 296 ○ Pause/ResumeAllServices
 - 297 ○ Pause/ResumeService – for a specific service
 - 298 ○ Remove PauseServiceAfterCurrentJob operation
 - 299 ○ Shutdown/Restart/StartupService(ServiceTypeName and optional ServiceId) – for a
300 specific service. If ServiceId is included, it operates on a specific service instance. If
301 ServiceId is not included, then it operates on the entire class of the service type.
 - 302 ○ GetSystemElements (renamed from GetMFDSERVICEElements)
 - 303 ○ Add SetSystemElements operation – this operation can not set SystemStatus elements
 - 304 ○ No Hold/ReleaseJob operations – System does not process jobs.
 - 305 ○ Add Startup/Shutdown/RestartAllServices(a list of ServiceTypeName and optional
306 ServiceId) –
 - 307 ▪ If ServiceId is included, it operates on specific service instances. If ServiceId is
308 not included, then it operates on the entire class of the service type.
 - 309 ▪ These operations operate on every service the System is configured to run.
310 Currently the model does not allow configuration of which services and how
311 many instances of each type are configured to run at startup. An element could be
312 added to the System, and SetSystemElements operation could be used to
313 configure the elements for the services to be started up by System. However, this
314 will allow a system administrator to configure the services to be started up, which
315 is not a normal operation for MFD. These services to be started up normally is
316 built in MFD by manufacturer’s default. “Startup Services” means create service
317 instances in DPA and all previous PWG semantics. These services to be started up
318 should be built-in by manufacturer’s factory defaults, which default attributes can
319 be changed after started up by the System.

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- AI: We need a ConfiguredServices element in SystemStatus, each sub-element has a ServiceType and a ServiceId, which can be used for the parameter of a Restartup operation after initial startup time. At the System initial start-up, the System automatically starts up all these configured/built-in manufacturer's services/queues with the factory default attributes and records these services in ConfiguredServices. Once the ConfiguredServices is recorded, it stays persistent throughout the life of MFD System. An administrator is allowed to disable/enable or change the default of the individual queues after start-up through individual service operations.
 - AI: Delete StartupAllServices operation, since the initial startup is an internal manufacturer's built-in function, and after that all startup should be a Restart operation.
 - Nancy raised the issues with the IDS required attributes and operations in System for SoH reporting that need to be considered. We agreed these need to be discussed in the near future whenever the time comes.

336 **7. Next Steps**

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- Pete to rework the XML Schema according to the conclusions from the meeting and publish it.
 - Pete to or find another editor to update and publish the FaxOut Service spec.
 - MFD WG Teleconference in 2 weeks from today on September 3, 2009, 3pm EDT.
 - As a side note for other PWG conference calls:
 - SC call is scheduled on next Thursday August 27, 2009, 2pm EDT.
 - WIMS WG conference call is schedule on next Tuesday (Sept 1).