

Scan Service Definition

V1.0 for Web Services on Devices

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Presentation Overview

- Review Purpose of Scan Service Definition Version 1.0
- Functional Model and scenario overview
- Review of Service Schema for Scanner, Job and Document elements
- Review of Events and Operations
- Goals of presenting Scan Service Definition to PWG

Purpose of Scan Service

- Scan Service Specification describes the operational model for network connected scanning devices
- Scanning model is focused primarily on capturing a document and delivering it to a destination client
- Operations/Events are more specific to consumer devices, whereas Service Schema is described for scanning in general, both consumer and enterprise-scale devices are included
- Proxy is considered inbox for Windows Vista operating systems

Functional Model



Functional Model

Job Setup

- Job Setup is provided by a client. The client determines the capabilities of the devices and an interface to allow users to choose scanning options
- Client creates scan ticket that specifies the scanning parameters of the user and will be used during Job Execution



Functional Model

Job Execution

- Physical Scan and generation of data
- Uses the scan ticket defined in job setup to define the parameters of job execution
- Ends when original document has been scanned and all data is transferred to destination
- Can be either Device or Client initiated (client sends a request to scan device)



Functional Model

Data Transfer

- Movement of data from device buffer to destination



Functional Model Usage Scenarios

Scan to Workstation, Device Initiated

- A user wants to scan a document to his PC, places documents on platen and selects scan configuration preferences. The user presses the 'Scan' button
- Device Notification of waiting scan (ScanAvailableEvent)
- Client initiated Execution (submits CreateScanJob operation)

Scan to Workstation, Client Initiated

- A user wants to scan a document to her PC, places documents on platen and uses UI hosted by a client that is near the device to select scan configuration preferences. The user presses the 'Scan' button from the client UI
- Client initiation Execution (submits CreateScanJob operation)

Service Schema

- Scanner, Job and Document elements are grouped together in logical elements

Example:

Scanner **Description**

- Contains descriptive information that is static per device or set by a control point

Description

- For Jobs and Documents contains descriptive information that is administratively set or supplied by a control point during job submission

Service Schema

The Scanner's Elements

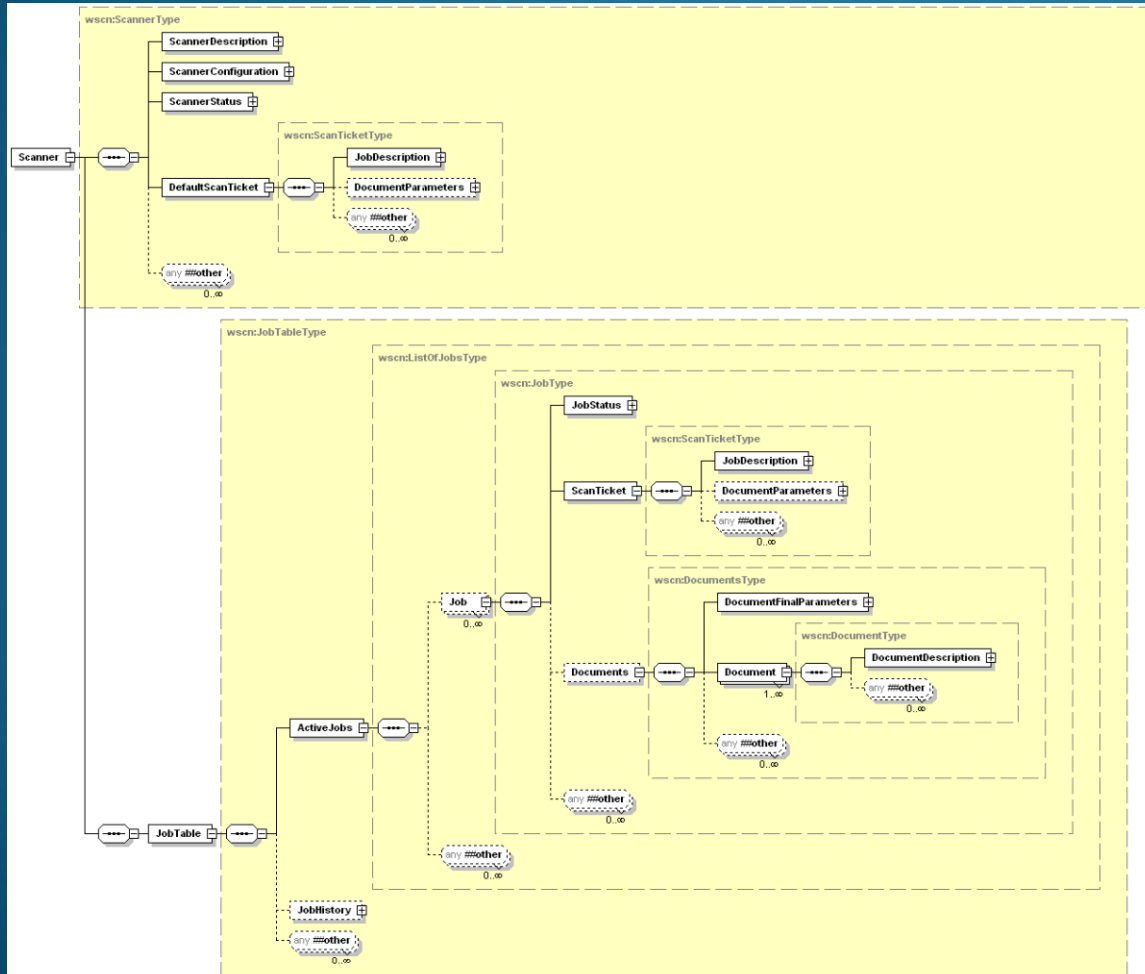


Figure 5 – Scanner Model
Scan Service Definition Model v1.0

Service Schema

The Scanner's Elements

ScannerDescription

ScannerDescription

- Elements contain a description of the Scanner
- i.e. ScannerName, ScannerInfo, ScannerLocation

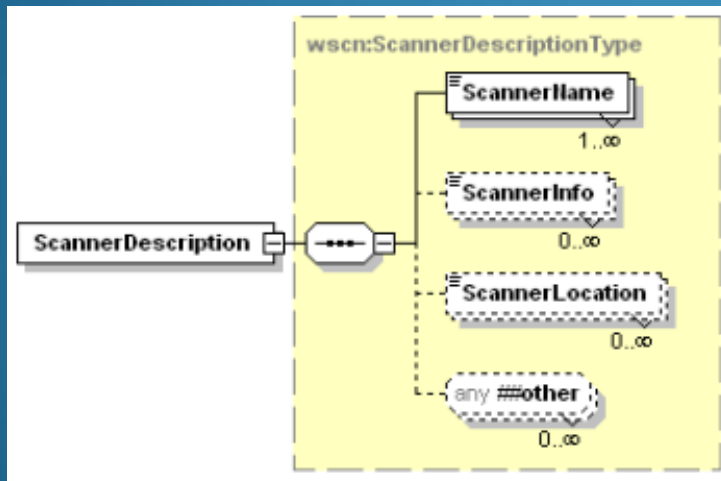


Figure 6 – ScannerDescription Elements
Scan Service Definition Model v1.0

Service Schema

The Scanner's Elements

ScannerConfiguration

ScannerConfiguration

- Elements contain a description of the configuration of the Scanner
- i.e. DeviceSettings, Platen (capabilities of the flatbed scanning platen available on the Scanner), ADF (capabilities of the ADF attached to the scanner), Film (capabilities of the Film scanning option)

Service Schema

The Scanner's Elements

Scanner Configuration

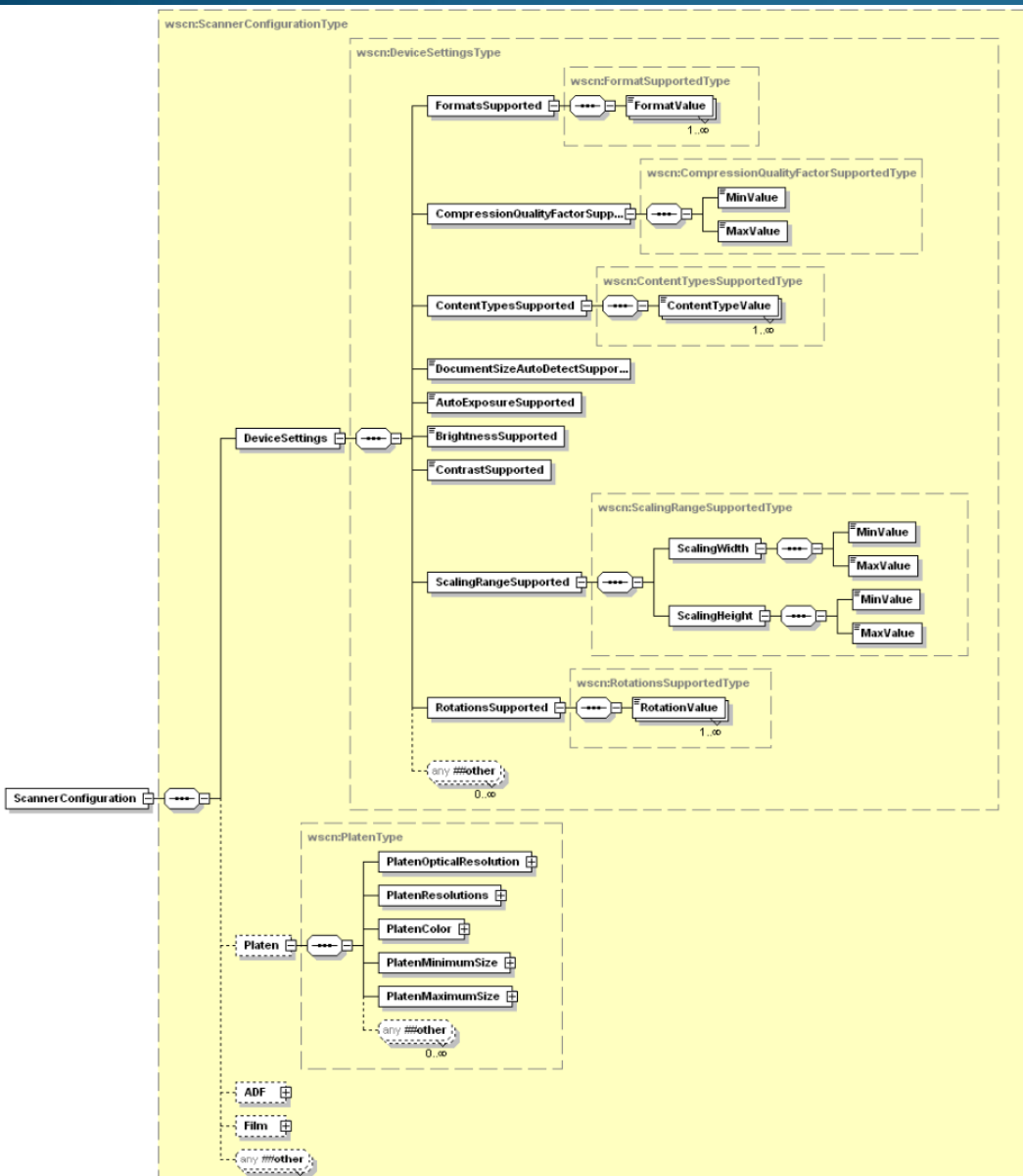


Figure 7 – ScannerConfiguration Elements
Scan Service Definition Model v1.0

Service Schema

The Scanner's Elements

ScannerStatus

ScannerStatus

- Elements contain status of a given scanner
- i.e. ScannerCurrentTime, ScannerState, ActiveConditions, ConditionHistory

Service Schema The Scanner's Elements ScannerStatus

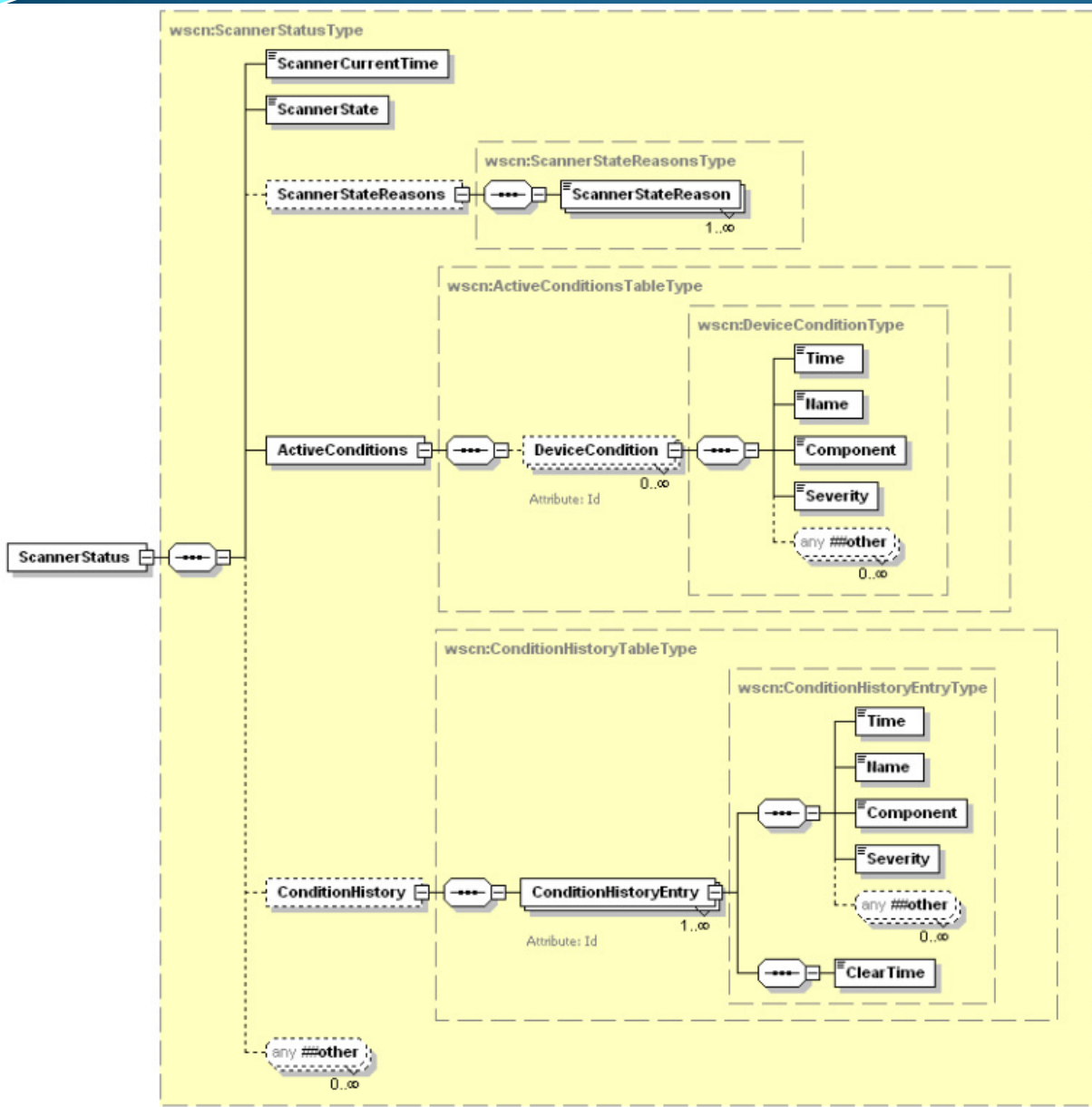


Figure 9 – ScannerStatus Elements
Scan Service Definition Model v1.0

Service Schema The Job's Elements

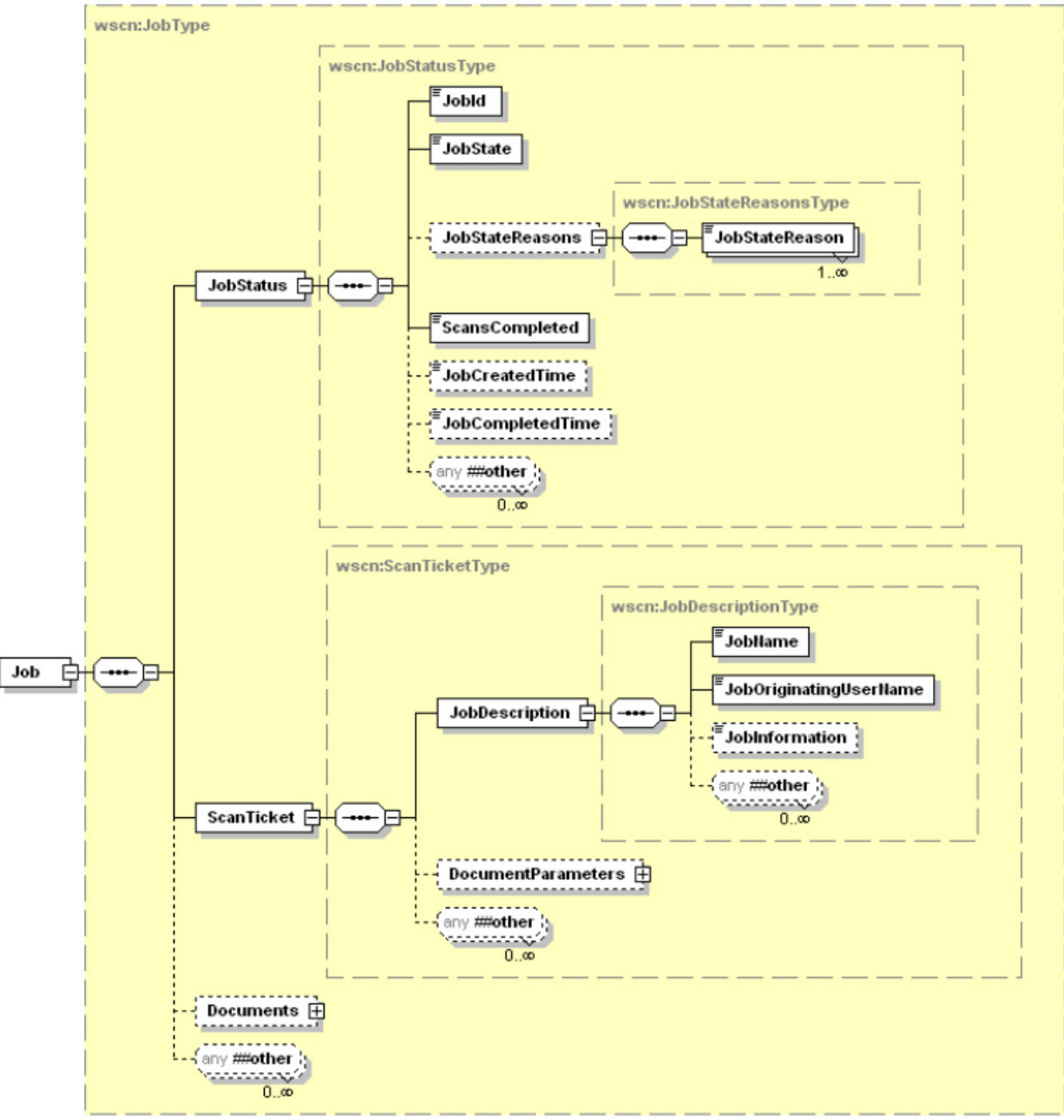


Figure 11 – Job Elements
Scan Service Definition Model v1.0

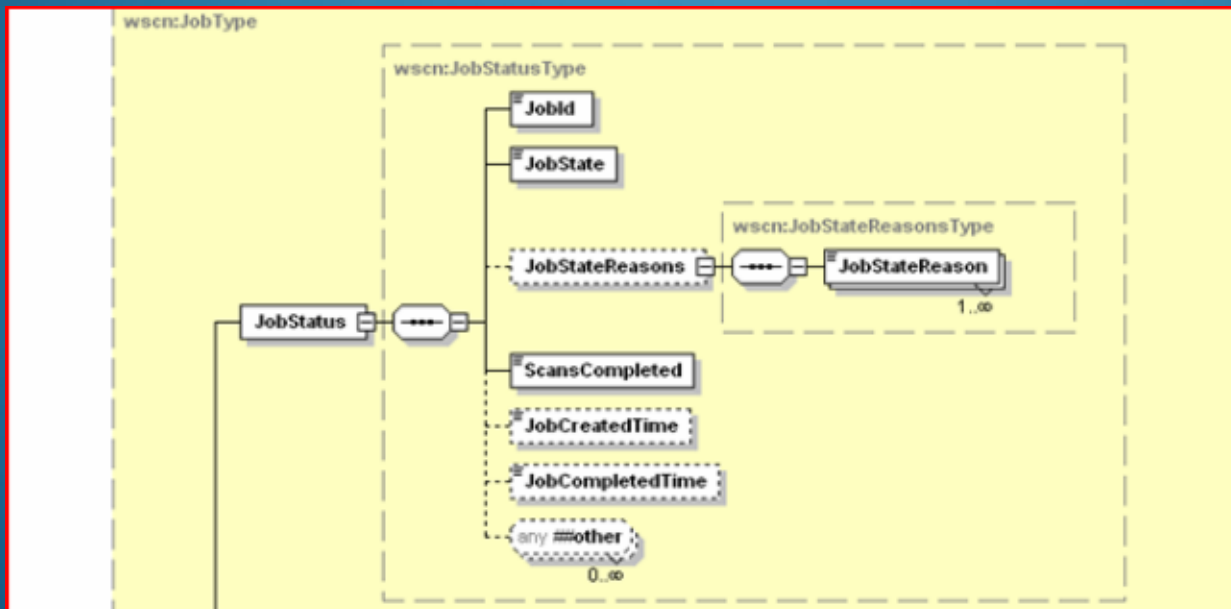
Service Schema

The Job's Elements

JobStatus

JobStatus

- Elements contain status of a given job
- i.e. JobID, JobState, JobStateReasons, JobCompletedTime, JobCreatedTime, ScansCompleted



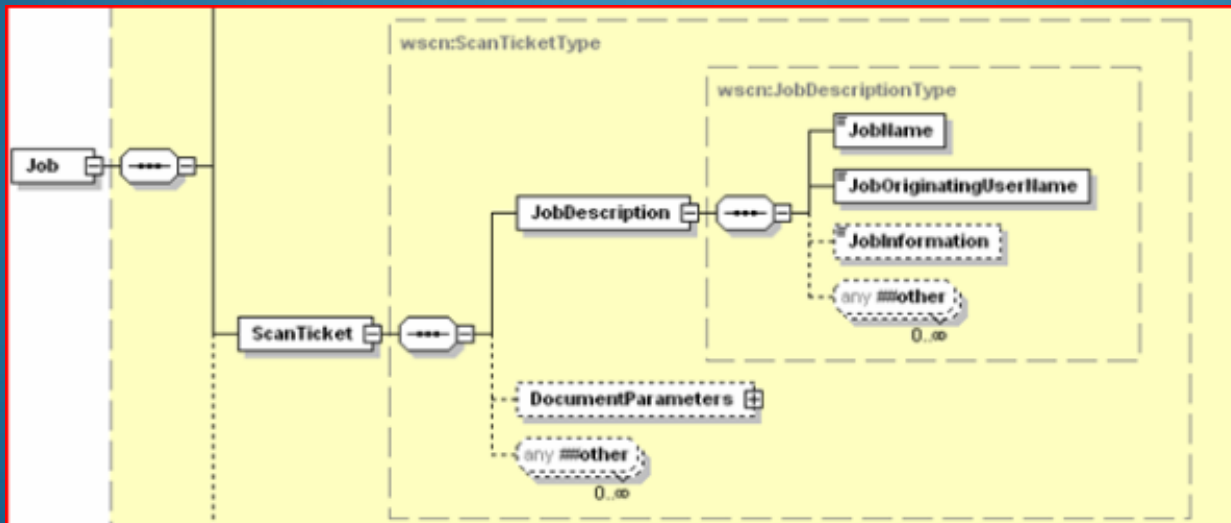
Service Schema

The Job's Elements

ScanTicket

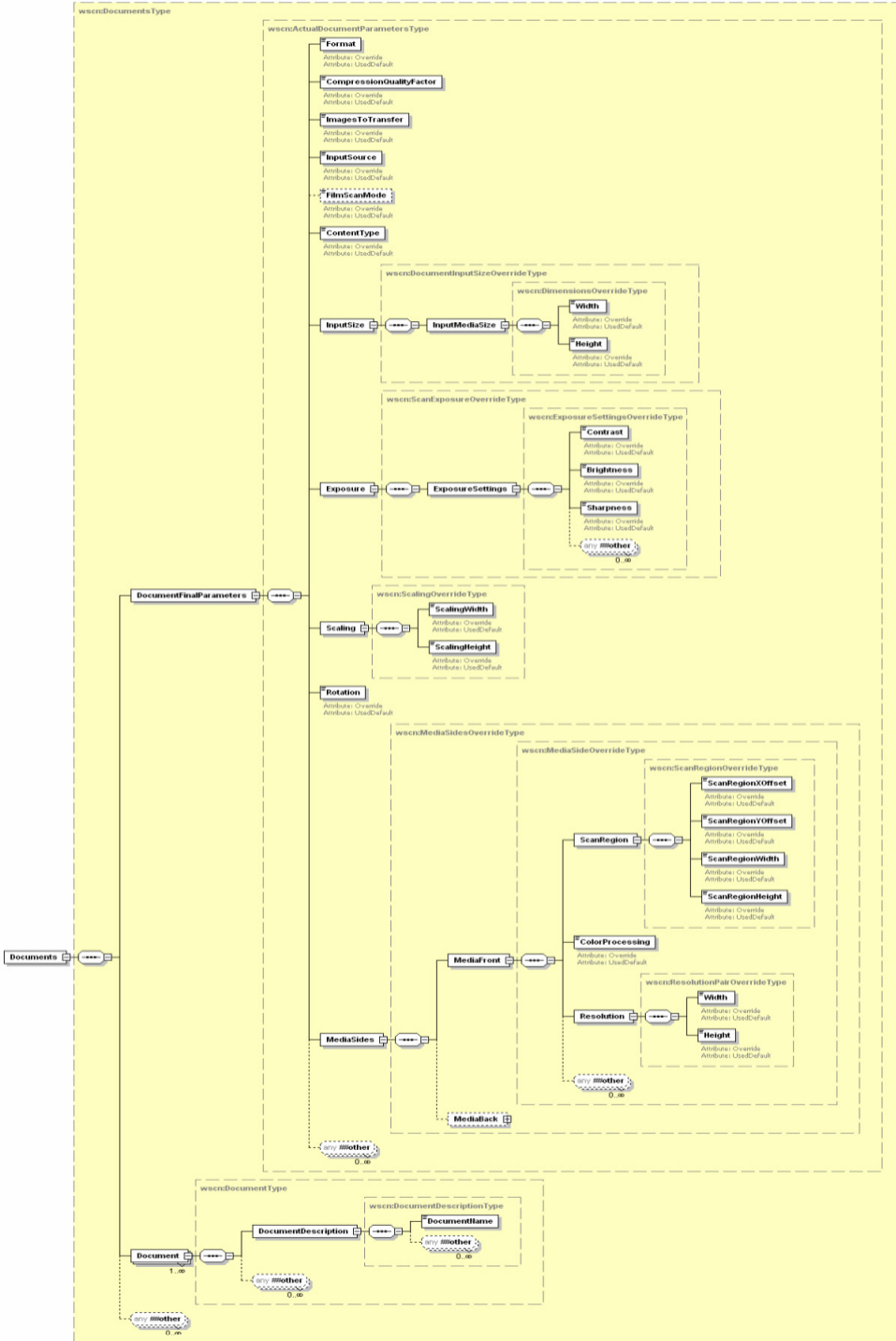
ScanTicket

- Elements define all the information that pertains to the description and processing parameters of the identified Job
- i.e. JobDescription, DocumentParameters (format, compressionqualityfactor, inputsource etc.)



Service Schema The Documents' Elements

Figure 14 – Document Elements
Scan Service Definition Model v1.0



Service Schema

The Documents' Elements

DocumentFinalParameters / Document

DocumentFinalParameters/Document

- Elements contain actual scan characteristics used during image acquisition
- i.e. DocumentFinalParameters (contains type of DocumentParameters, Document (DocumentDescription))
 - can override a Scan Ticket

Service Schema

Job Table

Job Table

- Describes how the Scanner keeps track of all the current and finished jobs submitted to the scanner service
- Contains ActiveJobs and JobHistory

ActiveJobs

Job

Documents

ScanTicket

JobStatus

JobDescription

DocumentParameters

any #other

DocumentFinalParameters

Document

DocumentDescription

DocumentName

any #other

any #other

any #other

any #other

any #other

any #other

JobTable

Job

Documents

ScanTicket

JobStatus

JobDescription

DocumentParameters

any #other

DocumentFinalParameters

Document

DocumentDescription

DocumentName

any #other

JobHistory

any #other

any #other

any #other

any #other

any #other

any #other

Service Schema

Job Table

Events

- ScanAvailableEvent
 - Informs the client that a scan device for which the client is subscribed for events is ready to scan a job
- ScannerElementsChangeEvent
 - Informs the client that something has changed in the ScannerDescription element, the ScannerConfiguration element, the DefaultScanTicket element or a 3rd party extension
- ScannerStatusSummaryEvent
 - Informs the client that the devices status has changed
- ScannerStatusConditionCleared
 - Provides the client detailed information about a status change in the device
- ScannerStatusConditionClearedEvent
 - Informs the client that a previously reported DeviceCondition has been cleared

Events

- JobStatus
 - Informs the client that a job's status has changed
- JobEndState
 - Informs the client that a Job has finished processing

Operations

- CreateScanJob
 - Prepares a scan device to scan the images available to it
 - May contain ScanIdentifier if initiated after ScanAvailableEvent
- RetrievalImage
 - Used to retrieve the scan data from the device after a scan job has been created
- CancelJob
 - Allows a client to cancel a scan job
- ValidateScanTicket
 - Allows a client to ask the scan device if the settings for a future scan operation are valid

Operations

- GetScannerElements
 - Allows a client to request information about the scanner
- GetJobElements
 - Allows a client to access job-related information of the specified Job
- GetActiveJobs
 - Allows a client to retrieve a list containing a summary of currently active jobs
- GetJobHistory
 - Allows a client to retrieve a list containing a summary of some of the recently completed jobs

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