



GMG ColorServer 5 Job Ticket Hotfolder

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1 Getting Started

1.1 Intention of Job Ticket Hotfolder

GMG ColorServer is able to read XML based Job Tickets and translate them into equivalent GMG ColorServer Jobs applying color management to a PDF or image.

The intention is to allow the processing of PDF and image files with a single hotfolder as a bridge to other software, with the possibility to control the processing parameters for each job individually instead of having static processing parameters as with a PDF or Image Hotfolder.

The Job Ticket Hotfolder is designed for a machine to machine data exchange.

1.2 Requirements

XML Job Ticket

Only **XML 1.0** is supported. The XML must be **well formed**, i.e. it must be compliant to the XML syntax rules. Information can be read from tag values and tag attributes.

The Job Ticket XML **must** contain the file path to the PDF or image to be processed.

The processing parameters to be used for the GMG ColorServer Job are optional because they can be defined in the Job Ticket Hotfolder as static parameters for each job.

XML Job Ticket Creator Software

The creator software must create a valid XML Job Ticket file according to the conventions mentioned above. Normally the creator software is a Prepress Workflow System or tool.

GMG ColorServer provides an XML file with a list of the available Normalization, Color, Image and PDF Template names. With the help of this XML, the optional processing parameters in a XML Job Ticket can be defined. The file is named *CapabilityList.xml*. It will be created as soon as a Job Ticket Hotfolder is added in GMG ColorServer. The creator software of a XML Job Ticket must refer to the template names in the *CapabilityList.xml*.

The output file and the job report file created by GMG ColorServer must be handled by the creator software. The software must wait until these files have been created by GMG ColorServer and start its own actions upon detection. The files are no longer under control of GMG ColorServer and therefore must be cleaned up by the creator software.

Knowledge

You must be familiar with the basics of XML and XPath. Easy to understand tutorials and examples can be found in the internet and are sufficient to setup up a Job Ticket Hotfolder in GMG ColorServer.

XML Tutorial: <https://www.w3schools.com/xml/default.asp>

XPath Tutorial: https://www.w3schools.com/xml/xpath_intro.asp

If you need to apply optional XSL transforms to refine the Job Ticket XML before it can be interpreted by GMG ColorServer you must have in depth knowledge and experience of XSLT.

XSLT Tutorial: https://www.w3schools.com/xml/xsl_intro.asp

1.3 How does the Job Ticket Hotfolder work?

To create a GMG ColorServer Job from a Job Ticket Hotfolder both the XML Job Ticket and the PDF or image to be processed are required. One Job Ticket refers to one PDF or image file.

The action to start a GMG ColorServer Job must be initiated by the triggering workflow/software as follows:

1. First, the file to be processed must be placed in the accessible file system scope of the GMG Hotfolder Service. It can be a local folder or a network resource that can be accessed by the GMG Hotfolder Service process.

Note: The file to be processed must not be saved into the input folder of the Job Ticket Hotfolder!

Note: If the GMG Hotfolder Service is running as Windows Service process the access to network resources is not possible!

2. If the Job Ticket refers to GMG ColorServer templates to control the color processing, the template names must be taken from the *CapabilityList.xml*. (see chapter 2.2)
3. A Job Ticket XML is created. It **must** contain the **absolute** path to the input file! (see step 1.) Other parameters are optional and can be defined in the Job Ticket Hotfolder parameters. The Job Ticket XML is saved into the input folder of the Job Ticket Hotfolder.

When the Job Ticket XML arrives in the Job Ticket Hotfolder the processing starts in GMG ColorServer as follows:

4. The XML file is read. It is converted with an XSL transform if defined in the Job Ticket Hotfolder.
5. The input file path is read from the XML and the file is uploaded to the GMG ColorServer.
6. If job parameters are set in the Job Ticket XML they are combined with the job parameters from the Job Ticket Hotfolder. All job parameters can be defined in the Job Ticket XML. Then no combination action is necessary.
7. A new GMG ColorServer Job is created with the job parameters and a reference to the uploaded input file on the GMG ColorServer.
8. The job is processed by a Worker and the resulting file is uploaded to the GMG ColorServer.
9. The GMG Hotfolder Service downloads the result file from the Server and saves it into the defined output folder. Usually the path to the output folder is defined in the Job Ticket XML.
10. An XML report is written into the defined report file. Usually, the path to the report file is defined in the Job Ticket XML. Before the XML file is written an XSL transform is applied (if set up in the Job Ticket Hotfolder).
11. If Cleanup/Backup actions for Job Ticket Hotfolder input folder/file are defined, these will be performed by the GMG Hotfolder Service.

The Job Ticket creator software must watch both the report and output folders to detect the end of the GMG ColorServer Job. It will then take over the processing:

12. It reads the report file to find out the status of the GMG ColorServer Job.

Note: If the job ends with error status no output file is written and only the report file exists!

13. Read the output file (PDF/image).
14. Perform a cleanup of the report file and output file.

Note: The report and output file are no longer under control of the GMG ColorServer Hotfolder Service. The Job Ticket creator software is responsible for a cleanup of these two files!

2 Setting up a Job Ticket Hotfolder

2.1 Supported GMG ColorServer Job Parameters

A GMG ColorServer Job has a great number of parameters. The most relevant can be defined in a Job Ticket Hotfolder. Parameters can either be set up static in the Job Ticket Hotfolder as in a PDF or Image Hotfolder, or read from the XML Job Ticket with an XPath query.

These are the job parameters used in the context of a Job Ticket Hotfolder:

- Input File Path (mandatory!)
- Job Priority (mandatory!)
- Output Folder Path (mandatory!)
- PDF Processing Template (mandatory for PDF Jobs!)
- Image Processing Template (mandatory for Image Jobs!)
- Report File Path
- Normalization Template
- Normalization Template Vector (only PDF Jobs)
- Color Template
- Color Template Vector (only PDF Jobs)
- Backup Folder Path for Input File
- Lifetime of Backup Files

Tip: Mandatory job parameters can be setup up static in the Job Ticket Hotfolder if not available in the Job Ticket XML.

2.2 CapabilityList.xml

A list of all available Image, PDF, Normalization and Color Templates of a GMG ColorServer configuration is available as an XML file. The file is named *CapabilityList.xml* and saved into the input folder of the Job Ticket Hotfolder.

It is a simple machine readable interface for 3rd party software to gather the GMG ColorServer Template names and their type. Templates control the processing parameters of a GMG ColorServer Job.

The *CapabilityList.xml* reflects the GMG ColorServer configuration and is updated instantly when a new Template is created or an existing one removed.

Note: Do not open the *CapabilityList.xml* from other software with an exclusive lock as GMG ColorServer needs constant write access to update its contents.

```

<?xml version="1.0" encoding="UTF-8">
<Acf>
  <AcfHeader>
    <VersionInfos>
      <Version Id="0" Number="4559" Description="ACF"/>
      <Version Id="1" Number="1913" Description="ACF-Solutions"/>
      <Version Id="1023" Number="329217" Description="Qt Framework"/>
      <Version Id="2000" Number="1342197317" Description="ColorServer"/>
      <Version Id="2001" Number="1342197317" Description="Protocol"/>
      <Version Id="2002" Number="1342197317" Description="Server"/>
    </VersionInfos>
  </AcfHeader>
  <CapabilityList>
    <Resources>
      <Templates>
        <PDF ID="{483ed750-276a-4682-889b-be54f8731c12}" Name="Flattn-noResampl-noSharpn"/>
        <Normalization ID="{4f0a55db-31ab-4d36-8c71-b6d8233247a3}" Name="ISOcoatedv2-39L"/>
        <PDF ID="{40bb2f8b-844b-424e-b12b-58170d36e54f}" Name="Use Flattening"/>
        <Color ID="{56936f22-7ad6-457c-9226-204cfd64e672}" Name="ISOcoatedv2-39L to PSO-Coatedv3-51"/>
        <Color ID="{46538fa8-4098-43b5-95a1-ebef4ec1bd6e}" Name="IO_WAN-IFRAnewspaper26v5_TAC215_G0_V1"/>
        <Normalization ID="{410e19ac-4c79-42f1-8713-c6d264b280e7}" Name="PSO-Coatedv3-51"/>
        <Color ID="{86a76b82-72a9-4d58-ad0b-ea69a8afee90}" Name="PSO-Uncoated47L to PSO-Uncoatedv3-52"/>
        <Color ID="{73bcc9a95-16be-4185-a16d-b2ee461c68c0}" Name="Resep PSO-Coatedv3-51_TAC300"/>
        <Image ID="{3a7372b6-344d-428c-8114-140406b9d3e3}" Name="Same As Input"/>
        <Image ID="{7002a9b4-191c-4b17-829b-2249e4137326}" Name="All to JPEG"/>
        <Color ID="{1df57112-8a36-4b7b-8b1f-33ed79d01581}" Name="CS_sep_AdobeRGB_2_eciCMYK_TAC400_V1"/>
        <Normalization ID="{08ff1811-c322-4d6f-ae1f-86680207a07e}" Name="PSO-Uncoatedv3-52"/>
        <PDF ID="{e4e53121-b51a-4be8-b937-eb34d1cad8f5}" Name="noFlattn-noResampl-noSharpn"/>
        <Color ID="{877f7701-4f27-4b6c-ba70-ca5d5e9ce01c}" Name="Print-CS_oon ISOUncoated29L_PSO-UncoatedNPscreen-44L_TAC300_V5"/>
        <Normalization ID="{c739d13c-a083-46d0-8eca-e206f7cde2bb}" Name="PSO-Uncoated-47L"/>
        <Color ID="{99ef4402-fb8-4c7b-a151-bb65eb937979}" Name="ColorSrv-CS_sep AdobeRGB_2 ISOcoatedv2-39L_TAC330_V3"/>
        <Color ID="{3df334de-c39f-4ff6-a8b4-ad6d9f74bcb4}" Name="Resep PSO-Uncoatedv3-52_TAC300"/>
        <PDF ID="{43c3a103-2efd-46ce-90a7-0ef842e4a9b2}" Name="No Flattening"/>
        <Normalization ID="{62db35c9-75ea-4164-9106-a953567f7384}" Name="AdobeRGB-Cmyk-Rgb-Lab-Gray-IccSubst"/>
        <Normalization ID="{850adb9b-f99f-4bf0-a125-625766a291fc}" Name="ISOUncoated-Rgb-Lab"/>
        <Image ID="{e589da76-6e4a-417f-9666-0663aaa91628}" Name="All to TIFF"/>
      </Templates>
      <ProductInfo ProductVersion="5.0.20037" APIVersion="5.0.20037"/>
    </Resources>
  </CapabilityList>
</Acf>

```

Example of a CapabilityList.xml

Tip: Before a new Job Ticket XML is created by the 3rd party software, the Template configuration from the *CapabilityList.xml* file should be read anew to update any new or removed GMG ColorServer Templates.

2.3 Job Ticket and Report XSL Transform

The Job Ticket XML may contain job parameters that have a value or type that is not understood by the GMG ColorServer Job Ticket Hotfolder. In that case an XSL transform can be used to convert the value into something acceptable. XSL allows the changing of values, creating new XML nodes and attributes from existing elements, values and attributes.

2.3.1 A simple example

The Job Ticket XML may contain the following element:

```
<JobPriority>High</JobPriority>
```

The priority for a job is given as a text in three grading: Low, Normal and High.

This is a problem because GMG Job Ticket Hotfolder expects a numeric value in the range 1-10 for the job priority.

An XSL transform can be done before the XML is read by the GMG Job Ticket Hotfolder to extend the XML element as follows:

```
<JobPriority gmgvalue="10">High</JobPriority>
```

The attribute "gmgvalue" is added and a value set that translates the priority text into a number. The original content and meaning of the priority is not changed or removed from the XML. Now the priority can be read by GMG Job Ticket Hotfolder with the following XPath query:

```
../../JobPriority/@gmgvalue
```

An XSL must be saved in a file. The XSL file can be selected in the Job Ticket Hotfolder UI. It is saved in the parameter file of a Job Ticket Hotfolder.

An XSL transform can be loaded for the GMG Report XML as well. The transform is applied before the report file is saved.

2.4 Creating a Job Ticket Hotfolder

A Job Ticket Hotfolder is created, modified and deleted within the GMG ColorServer Client. Its configuration is saved on the Server and used by the GMG Hotfolder Service. This follows the same principles as PDF and Image Hotfolders.

To create a new Job Ticket Hotfolder, go to the Hotfolders tab in ColorServer Client:

1. Select the Job Ticket Hotfolder type filter.
2. Click the New button in the Toolbar.
3. A new tab with the Job Ticket Hotfolder parameters is opened. Set up the parameters. The parameters are described below in detail.
4. Save the Hotfolder.

Note: To use the Job Ticket Hotfolder and see it in the Hotfolders tab of the GMG ColorServer Client, an additional license is required. Either the **Option ColorServer 5.0 JobTicket Hotfolder** or **Option ColorServer 5.0 API** is needed.

2.5 Job Ticket Hotfolder Parameter

Host

<i>Parameter</i>	<i>Description</i>
Target Computer	Names of computers the Hotfolder Service is running on and that are connected to this Server

Input Folders

<i>Parameter</i>	<i>Description</i>
Hotfolder Location	Root folder used for the input path set up as Hotfolder Location
Subfolder	Relative path to the input folder for XML Job Ticket files inside the Hotfolder Location. To include only files with a particular file extension the File Filters in Job Ticket Definition group can be used.
Folder Depth	Number of sub folder levels observed for input job tickets.
Timeout for Stability Check	Time to wait for changes of the input file before the file is processed. A change can be the file size, creation time and modification time of a file.
Use Creation Time for File and Modification Detection	File Creation Time is taken into account for the stability check of the input file and the creation of a new job, after the processing has been started or finished.
Use Modification Time for File and Modification Detection	File Modification Time is taken into account for the stability check of the input file and the creation of a new job after the processing has been started or finished.
Create Job if File has been modified	If a modification of the file has been detected the input file is processed again as a new job.
Create Capability Lists	A file named <i>CapabilityList.xml</i> will be created in the input folder of the Job Ticket Hotfolder if the checkbox is activated. Please read chapter 2.2 in this documentation to learn more about this file.

Job Ticket Definition

<i>Parameter</i>	<i>Description</i>
File Filter	Job Ticket Hotfolder only supports Name Filters. A Name Filter defines a text string that either has to exist in the file name (include) of the input file or that must not exist in the file name (exclude) of an input file. More than one Name Filter can be defined. All defined filters are combined with a logical 'And' i.e. the name of the input file must match all of the defined Filters likewise.
Job Ticket XSLT	Loads an XSL file into the Job Ticket Hotfolder configuration. Please read chapter 2.3 in this documentation to learn more about the usage of a XSLT. The XSL transform is applied to the XML Job Ticket file in the input folder before the interpretation by the Job Ticket Hotfolder.
Job Priority	Sets the priority of the job to be created. If the XPath checkbox is deactivated the value can be setup static in the Job Ticket Hotfolder. If the XPath checkbox is activated a valid XPath query must be filled in to read the value form the XML Job Ticket. This parameter is mandatory.
Job Cleanup Settings	Sets the cleanup strategy for the GMG ColorServer Job that is created from the Job Ticket XML.
Input File Path	Sets the absolute path to the PDF or image to be processed. (No relative path in the scope of a Hotfolder Location!) If the XPath checkbox is deactivated the path can be setup static in the Job Ticket Hotfolder. If the XPath checkbox is activated a valid XPath query must be filled in to read the file path form the XML Job Ticket. This parameter is mandatory. Note: The give path must be accessible from the Hotfolder Service. Network resources require the Hotfolder Service to be started as an Application in a Desktop session with appropriate login credentials for that network resource.
Output Folder	Sets the absolute path to the output folder. (No relative path in the scope of a Hotfolder Location!) If the XPath checkbox is deactivated the path can be setup static in the Job Ticket Hotfolder. If the XPath checkbox is activated a valid XPath query must be filled in to read the folder path form the XML Job Ticket. This parameter is mandatory. Note: The give path must be accessible from the Hotfolder Service. Network resources require the Hotfolder Service to be started as an Application in a Desktop session with appropriate login credentials for that network resource.
Reporting	Sets the absolute path to the report file. (No relative path in the scope of a Hotfolder Location!) If the XPath checkbox is deactivated the path can be setup static in the Job Ticket Hotfolder. If the XPath checkbox is activated a valid XPath query must be filled in to read the file path form the XML Job Ticket. Note: The give path must be accessible from the Hotfolder Service. Network resources require the Hotfolder Service to be started as an Application in a Desktop session with appropriate login credentials for that network resource.
Report XSLT	Loads a XSL file into the Job Ticket Hotfolder configuration. Please read chapter 2.3 in this documentation to learn more about the usage of a XSLT. The XSL transform is applied to the XML report file before it is written.

Color Processing

<i>Parameter</i>	<i>Description</i>
Normalization	<p>Sets the Normalization Template of the job that is created.</p> <p>If the XPath checkbox is deactivated the template can be setup static in the Job Ticket Hotfolder.</p> <p>If the XPath checkbox is activated a valid XPath query must be filled in to read the template name form the XML Job Ticket.</p> <p>It applies to PDF and Image Jobs.</p>
Conversion	<p>Sets the Color Template of the job that is created.</p> <p>If the XPath checkbox is deactivated the template can be setup static in the Job Ticket Hotfolder.</p> <p>If the XPath checkbox is activated a valid XPath query must be filled in to read the template name form the XML Job Ticket.</p> <p>It applies to PDF and Image Jobs.</p>
Image Processing	<p>Sets the Image Template of the job that is created.</p> <p>If the XPath checkbox is deactivated the template can be setup static in the Job Ticket Hotfolder.</p> <p>If the XPath checkbox is activated a valid XPath query must be filled in to read the template name form the XML Job Ticket.</p> <p>It applies to Image Jobs only. Mandatory for Image Jobs.</p>
PDF Processing	<p>Sets the PDF Template of the job that is created.</p> <p>If the XPath checkbox is deactivated the template can be setup static in the Job Ticket Hotfolder.</p> <p>If the XPath checkbox is activated a valid XPath query must be filled in to read the template name form the XML Job Ticket.</p> <p>It applies to PDF Jobs only. Mandatory for PDF Jobs.</p>
Normalization (Vector)	<p>Sets the Normalization Template for vector/text elements of the PDF job that is created. Optional. If not defined the Normalization Template is used for vector/text elements.</p> <p>If the XPath checkbox is deactivated the template can be setup static in the Job Ticket Hotfolder.</p> <p>If the XPath checkbox is activated a valid XPath query must be filled in to read the template name form the XML Job Ticket.</p> <p>It applies to PDF Jobs only.</p>
Conversion (Vector)	<p>Sets the Color Template for vector/text elements of the PDF job that is created. Optional. If not defined the Conversion Template is used for vector/text elements.</p> <p>If the XPath checkbox is deactivated the template can be setup static in the Job Ticket Hotfolder.</p> <p>If the XPath checkbox is activated a valid XPath query must be filled in to read the template name form the XML Job Ticket.</p> <p>It applies to PDF Jobs only.</p>

Backup and Cleanup

<i>Parameter</i>	<i>Description</i>
Job Ticket – No Cleanup/Backup	The XML Job Ticket file remains in the input folder after processing.
Job Ticket – Delete Job Ticket File	The XML Job Ticket file is deleted from the input folder when the created GMG ColorServer Job has been finished.
Job Ticket – Move Job Ticket File	<p>The XML Job Ticket file is moved from the input folder to a backup folder when the created GMG ColorServer Job has been finished. For the backup folder a Hotfolder Location and a path to a subfolder have to be defined.</p> <p>An automatic cleanup for the backup file can be set up.</p>
Processing File – No Cleanup/Backup	The input PDF or Image defined in the XML Job Ticket remains in its folder.
Processing File – Delete Input File	The input PDF or Image defined in the XML Job Ticket is deleted when the created GMG ColorServer Job has been finished.
Processing File – Move Input File	<p>The input PDF or Image is moved from its folder to a backup folder when the created GMG ColorServer Job has been finished.</p> <p>If the XPath checkbox is deactivated the path can be set up static in the Job Ticket Hotfolder.</p> <p>If the XPath checkbox is activated a valid XPath query must be filled in to read the path form the XML Job Ticket.</p> <p>Note: The give path must be absolute and accessible from the Hotfolder Service. Network resources require the Hotfolder Service to be started as an Application in a Desktop session with appropriate login credentials for that network resource.</p> <p>An automatic cleanup for the backup file can be set up.</p> <p>If the XPath checkbox is deactivated the number of hours can be set up static in the Job Ticket Hotfolder.</p> <p>If the XPath checkbox is activated a valid XPath query must be filled in to read the number of hours form the XML Job Ticket.</p>

3 Example

3.1 Starting position

3.1.1 What is the Use Case?

A PDF file that is managed by a 3rd party workflow/software is to be processed with GMG ColorServer. The input file is to be replaced with the result file from GMG ColorServer without leaving the environment of the origin workflow/software. Thus this use case cannot be set up with a normal PDF Hotfolder, a Job Ticket Hotfolder must be used.

3.1.2 The Job Ticket XML

The following Job Ticket XML structure is given. It should be used to create GMG ColorServer Jobs with the help of a Job Ticket Hotfolder.

```
<?xml version="1.0" encoding="UTF-8"?>
<job>
  <priority>Normal</priority>
  <input folder="C:\Hotfolders">AltonaVisual_1v2a_pt1com_x3.pdf</input>
  <output folder="C:\Hotfolders" report="C:\Hotfolders\report.csv"/>
  <templates>
    <required type="PDF">Use Flattening</required>
    <norm>ISOcoatedv2-39L</norm>
    <color>ISOcoatedv2-39L to PSO-Coatedv3-51</color>
    <normVec>ISOcoatedv2-39L</normVec>
    <colorVec>ISOcoatedv2-39L to PSO-Coatedv3-51</colorVec>
  </templates>
</job>
```

The Job Ticket XML transports the following information:

- Priority of the Job to be created
- Name and path to the PDF to be processed
- Path to the target folder for the result PDF
- Path to the file for the GMG Job Report
- The GMG ColorServer Templates to be used

All of this information may vary from job to job and therefore they have to be read by the GMG Job Ticket Hotfolder per job and must not be set up static as hotfolder parameters.

3.1.3 What are the tasks?

To make GMG ColorServer able to receive the Job Ticket XML and to process the PDF file the following tasks are required:

1. Create a new Job Ticket Hotfolder that creates a *CapabilityList.xml* and set up the appropriate XPath queries
2. Create a XSL file to translate the priority text form the Job Ticket XML into a GMG priority number and concatenate the input PDF file name with the folder path in the attribute "folder" to make the full file path accessible from a XPath query
3. Read available GMG Templates from the *CapabilityList.xml* in 3rd party software
4. Add listener to the GMG Report file and output destination in 3rd party software to detect the end of a GMG ColorServer Job and its final status.
5. Set up cleanup of GMG Report file from 3rd party workflow/software

Note: Tasks 3 – 5 describe in principle the integration work to be done in any 3rd party software. It is possible to establish a Job Ticket XML workflow with GMG ColorServer without reading *CapabilityList.xml* dynamically and without watching and reading the GMG Report file.

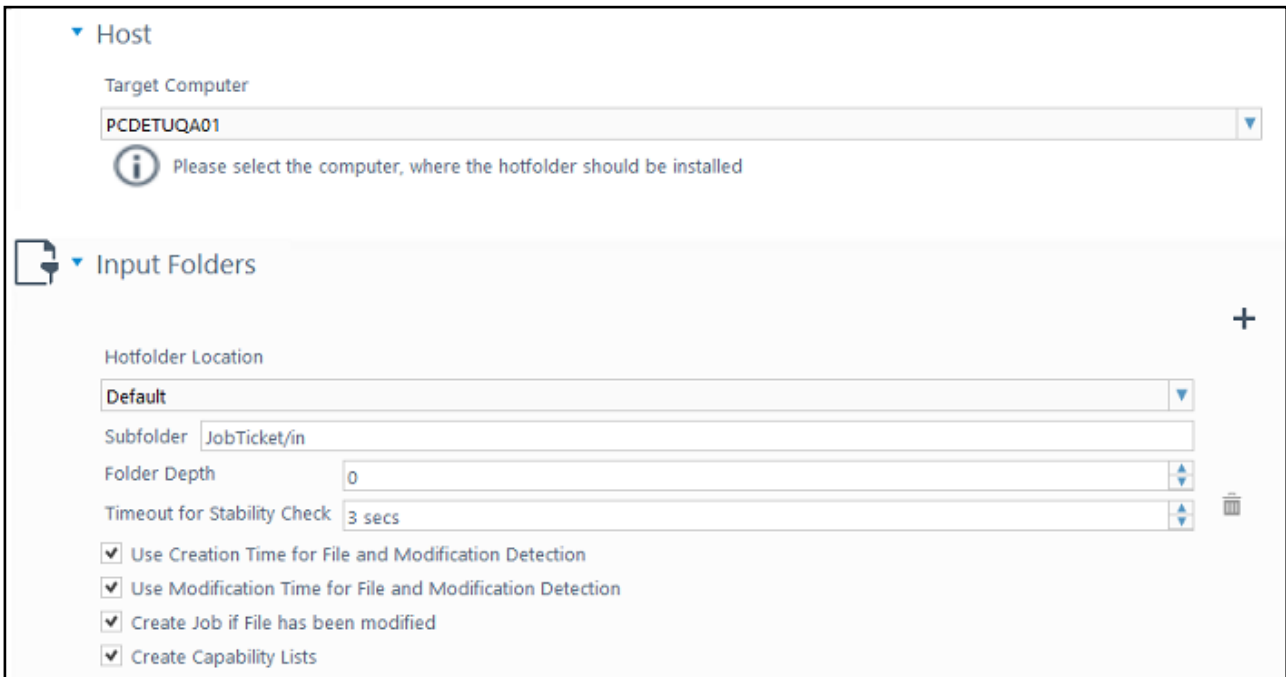
3.1.4 General considerations

The GMG Hotfolder Service requires read and write access to the PDF file to be processed in this example. This is normally easy to ensure if GMG ColorServer and the other software are running on the same computer.

If the 3rd party software is running on a different computer, it is advisable to install a second GMG Hotfolder Service on that computer. This leaves local file policies to control the read/write access of GMG Hotfolder Service to the 3rd party's software environment, and no remote file access configurations have to be done.

3.2 GMG ColorServer Configuration step-by-step

3.2.1 Create a new Job Ticket Hotfolder



The screenshot shows the configuration interface for a Job Ticket Hotfolder. It is divided into two main sections: "Host" and "Input Folders".

- Host:** A dropdown menu for "Target Computer" is set to "PCDETUQA01". Below it is an information icon and the text: "Please select the computer, where the hotfolder should be installed".
- Input Folders:** This section contains several fields and checkboxes:
 - "Hotfolder Location" is set to "Default".
 - "Subfolder" is set to "JobTicket/in".
 - "Folder Depth" is set to "0".
 - "Timeout for Stability Check" is set to "3 secs".
 - Four checkboxes are checked:
 - Use Creation Time for File and Modification Detection
 - Use Modification Time for File and Modification Detection
 - Create Job if File has been modified
 - Create Capability Lists

Define the Input folder for the Job Ticket XML file and enable the creation of the *CapabilityList.xml*.



The screenshot shows the "Job Ticket Definition" configuration section. It contains two main fields:

- File Filter:** A checkbox labeled "Name Filters" is unchecked. Below it is an empty text input field.
- Job Ticket XSLT:** An empty text input field with a folder icon on the right side.

Leave the Job Ticket XSLT empty for the moment. It can be added later when it has been created.

Job Creation

Job Priority

XPath

Job Cleanup Settings

Delete Job after Processing Successful + Warning

Input File Path

XPath

Output Folder

XPath

Existing Files Output Name

Overwrite Append Number Prefix Suffix

Reporting

Report File

XPath

Report XSLT

In this example, the priority in the Job Ticket XML is given as text ('Normal'). It cannot be read without a transformation into a GMG priority number so it is set up static for the moment. As soon as the XSL transform has been added to the Job Ticket Hotfolder it can be changed to XPath.

The Input File Path is set to `/job/input` although the node in the Job Ticket XML only contains the file name but not the absolute path to the file. This has to be fixed by a XSL transform as well.

```
<input folder="C:\Hotfolders">AltonaVisual_1v2a_pt1com_x3.pdf</input>
```

It is recommended to delete all GMG ColorServer Jobs automatically as there is no possibility to do so via 3rd party software when using Job Ticket Hotfolder.

XPath `/job/input` queries `<job><input>` node.

XPath `/job/output@folder` queries the `folder` attribute of the `<job><output>` node.

The existing file must be overwritten in this use case because the original file is to be replaced by the result file of GMG ColorServer.

XPath `/job/output@report` queries the `report` attribute of the `<job><output>` node.

Note: XML and XPath are **case sensitive!** A node `<job>` will not be matched by an XPath `/Job!`

Color Processing

XPath /job/templates/norm

XPath /job/templates/color

XPath /job/templates/required[@type='IMAGE']

XPath /job/templates/required[@type='PDF']

XPath /job/templates/normVec

XPath /job/templates/colorVec

XPath /job/template/norm queries <job><templates><norm> node.

XPath /job/template/color queries <job><templates><color> node.

XPath /job/template/required[@type=' IMAGE'] queries <job><templates><required> node if attribute type is 'IMAGE'.

XPath /job/template/required[@type=' PDF'] queries <job><templates><required> node if attribute type is 'PDF'.

XPath /job/template/normVec queries <job><templates><normVec> node.

XPath /job/template/colorVec queries <job><templates><colorVec> node.

Backup and Cleanup

Job Ticket

No Cleanup/Backup
 Delete Job Ticket File
 Move Job Ticket File

Target Folder: Subfolder:

Existing Files: Overwrite Append Number Prefix: Suffix:

Delete Job Ticket After (Hours):

Processing File

No Cleanup/Backup
 Delete Input File
 Move Input File

Target Folder:

Existing Files: XPath:

Existing Files: Overwrite Append Number Prefix: Suffix:

Delete Input File After (Hours):

The Job Ticket XML is to be deleted when the GMG ColorServer Job has been finished, so the delete action for file is defined.

A Backup and Cleanup for the input PDF cannot be defined because the input file is to be replaced by the result PDF. The Cleanup/Backup actions are done after the resulting PDF has been saved.

3.2.2 Create an XSL for the Job Ticket XML

The Job Ticket XML has to be transformed because the job priority is given as text and the path to the input PDF is given in two values and cannot be accessed by a single XPath query.

The following XSL will do the required transform:

```

<?xml version="1.0" ?>
<xsl:stylesheet version="1.0" xmlns:xsl="http://www.w3.org/1999/XSL/Transform">
  <xsl:output method="xml" version="1.0" encoding="UTF-8" />
  <xsl:template match="/job">
    <xsl:copy>
      <xsl:for-each select="*">
        <xsl:choose>
          <xsl:when test="name()='priority'">
            <xsl:copy>
              <xsl:attribute name="gmvalue">
                <xsl:if test="current()='Low'">1</xsl:if>
                <xsl:if test="current()='Normal'">5</xsl:if>
                <xsl:if test="current()='High'">10</xsl:if>
              </xsl:attribute>
              <xsl:value-of select="current()" />
            </xsl:copy>
          </xsl:when>
          <xsl:when test="name()='input'">
            <xsl:copy>
              <xsl:copy-of select="@*"/>
              <xsl:value-of select="current()/@folder"/>\<xsl:value-of select="current()" />
            </xsl:copy>
          </xsl:when>
          <xsl:otherwise>
            <xsl:copy-of select="current()" />
          </xsl:otherwise>
        </xsl:choose>
      </xsl:for-each>
    </xsl:copy>
  </xsl:template>
</xsl:stylesheet>

```

After the transform has been applied the Job Ticket is as follows:

```

<?xml version="1.0" encoding="UTF-8"?>
<job>
  <priority gmvalue="5">Normal</priority>
  <input folder="C:\Hotfolders">C:\Hotfolders\AltonaVisual_1v2a_pt1com_x3.pdf</input>
  <output folder="C:\Hotfolders" report="C:\Hotfolders\report.csv"/>
  <templates>
    <required type="PDF">Use Flattening</required>
    <norm>ISOcoatedv2-39L</norm>
    <color>ISOcoatedv2-39L to PSO-Coatedv3-51</color>
    <normVec>ISOcoatedv2-39L</normVec>
    <colorVec>ISOcoatedv2-39L to PSO-Coatedv3-51</colorVec>
  </templates>
</job>

```

A new attribute “gmvalue” with the value 5 is added to the <priority> node. The original priority value has been preserved.

The value of the node <input> is replaced by a new value that is build of the concatenation of the attribute value for “folder” and its original value. The original values are spliced with a “\”.

3.2.3 Add Job Ticket XSL to Hotfolder


Open the created Job Ticket Hotfolder. Load the XSL file for the Job Ticket XML transform into the Hotfolder parameters.

▼ Job Ticket Definition

File Filter

Name Filters

Job Ticket XSLT

C:/Hotfolders/ticket.xsl 

The path of the loaded XSL file will be shown. The content of the file is added to the Job Ticket Hotfolder parameters so it can be accessed from any GMG Hotfolder Service over the network. The XSL file path is just given as information and will not be accessed any more.

Now set up the XPath query for the job priority:

Save the Hotfolder parameters.

3.2.4 Test the Job Ticket Hotfolder

Create a Job Ticket XML or modify the sample XML with valid entries to the files and folders and template names. Ensure the input PDF exists.

Note: The sample XML has to be edited with an UTF-8 compatible editor. Older versions of Windows Editor save ANSI encoded files that will not be valid.

Copy the Job Ticket XML into the input folder. Watch the Job List in Client.

A new PDF Job is created and processed. The resulting PDF overwrites the input file. A report file is written.

Open the report file. The GMG Report is always delivered as an XML file.

3.2.5 Create an XSL for the Report XML

Finally the GMG Report XML should be transformed into a CSV text file because this is what the 3rd party software can read easily to detect the final GMG Job Status.

The following XSL will extract the essential information and write them into a semicolon-separated text row:

```

<?xml version="1.0"?>
<xsl:stylesheet version="1.0" xmlns:xsl="http://www.w3.org/1999/XSL/Transform">
  <xsl:output method="text" encoding="UTF-8" />
  <xsl:template match="/">
    <xsl:value-of select="/Acf/OutputFile"/>;<xsl:value-of select="/Acf/Status"/>;<xsl:for-each select="/Acf/ProcessingLog/ProcessingLog/Message[&Category='2' or &Category='3']">
      <xsl:value-of select="current()/&Text"/>;</xsl:for-each>
  </xsl:template>
</xsl:stylesheet>

```

The first column contains the path to the output file.

Then the final GMG Job Status follows as text.

The third column contains a concatenation of all Warning and Error texts in the GMG Report XML. The text strings are separated with a "|". The column can be empty for a successful job.

After the transform with the Report XSL the result looks as follows:

```

C:/Hotfolders/AltonaVisual_1v2a_pticom_x3.pdf;WARNING;"Couldn't find MX-substitution profile for input icc profile 'ECI-RGB.icc' and output ICC-profile 'ISO Coated v2 (ECI)'"|Couldn't find MX-substitution profile for input icc profile 'Wide Gamut RGB' and output ICC-profile 'ISO Coated v2 (ECI)'"|Couldn't find MX-substitution profile for input icc profile 'ECI-RGB.V1.0.icc' and output ICC-profile 'ISO Coated v2 (ECI)'"

```

(The text is shown with auto word wrap, but is actually a single line of text.)

3.2.6 Add Report XSL to Hotfolder

Open the created Job Ticket Hotfolder. Load the XSL file for the GMG Report XML transform into the Hotfolder parameters.

The path of the loaded XSL file will be shown. The content of the file is added to the Job Ticket Hotfolder parameters so it can be accessed from any GMG Hotfolder Service over the network. The XSL file path is just given as information and will not be accessed any more.

Save the Hotfolder parameters.

3.2.7 Test the Report XSLT

Restore the original input file.

Copy the Job Ticket XML again into the input folder. Watch the Job List in Client.

Another PDF Job is created and processed. The result PDF overwrites the input file as before. The report file is written as text file now.

Open the report file and see the text.

4 Troubleshooting

4.1 Log files

Warnings and errors that occur during Job Ticket XML reading and job creation from a Job Ticket Hotfolder configuration are written into the *HotfolderService.log*.

The log file can be found here: *C:\Users\Public\GMG\ColorServer\Hotfolder Service*

XPath errors and other XML errors occur before a GMG ColorServer Job is created and therefore there is no error job in the job list.

4.2 Frequent mistakes

4.2.1 Job Ticket XML

The Job Ticket XML is invalid when the XML syntax is invalid. To verify the syntax an appropriate tool is required. A valid XML is called "well formed" and must conform to all XML syntax rules.

Frequent errors in XML files:

No root element. All elements must be children of a single root element.

Error: `<abc></abc><def></def>`

Correct syntax: `<root><abc></abc><def></def></root>`

Wrong or missing closing tags. Missing / or wrong place of / in closing tag.

Error: `<element><element />` or `<element><element>`

Correct syntax: `<element></element>`

Missing white spaces.

Error: `<element attrA="1"attrB="2"></element>` (missing space between " and a)

Correct syntax: `<element attrA="1" attrB="2"></element>`

Line break, tab or white spaces within an element.

All characters between the opening and closing tag matter and form the content of an element!

Mix of text and other elements within an element.

Error: `<element>text<something>...</something></element>`

Correct syntax: `<element><text>text</text><something>...</something></element>`

Missing XML Prolog.

First line in an XML must be `<?xml version="1.0" encoding="UTF-8"?>`

The encoding must match the actual encoding of the file.

Incorrect nesting of elements.

Error: `<a><c></c>`

Correct syntax: `<a><c></c>`

Case sensitivity!

Error: `<Element></element>`

Correct syntax: `<Element></Element>`

Attributes are not quoted.

Error: `<element attribute=123 />`

Correct syntax: `<element attribute="123" />`

4.2.2 XPath

\ instead of /

Error: \root\anotherelement\mynode

Correct syntax: /root/anotherelement/mynode

Upper and lower case does not match between XML element and XPath query. XML and XPath are case sensitive!

Error: XML=<Element>, XPath = element

Correct syntax: XML=<Element>, XPath = Element

Query does not start with a / when accessing XML elements with an absolute path from the root.

Error: XML=<root><Element /></root>, XPath = root/Element

Correct syntax: XML=<root><Element /></root>, XPath = /root/Element

Missing / in XPath query between element name and its attribute name when accessing an attribute value.

Error: /element@attribute

Correct syntax: /element/@attribute

Use of wildcards. The XPath query for parameter reading must be unambiguous!

Error: /element/*

Correct syntax: /element/anode

Note: An distinct query can contain a wildcard, e.g. if the root element name changes depending on the file format of the file to be processed.

Correct syntax of a distinct query with changing root element: /*/path

This will match both <pdf><path>...</path></pdf> and <image><path>...</path></ image >.

Expression in Predicate has syntax error or logic mistake.

E.g. select first element <file> in element <list>

Error: /list/file[0] (Element count starts with 1)

Correct syntax: /list/file[1]

4.2.3 XSL Transform

Before loading an XSL file for the Job Ticket XML or the GMG Report XML to the Job Ticket Hotfolder, take a general example of either the Job Ticket XML or the GMG Report XML and verify the transform in an appropriate tool to test the outcome of the transformation! GMG ColorServer is not able to know your intention of the transform and therefore no errors are reported. A transform can be technically correct, but its result may be logical wrong – keep this in mind!

A common mistake is to rely on XML elements and attributes in the XSL that vary or are not there all the time. Without using appropriate conditions in the XSL, the transform will be unpredictable. Be precise when selecting an appropriate example XML for the XSL creation!

4.3 Tools

A tool to view and edit XML and XSL files with syntax highlighting is the best choice to set up a Job Ticket Hotfolder and to solve problems.

A good tool for Windows that is free of charge is Notepad++ source code editor.

(<https://notepad-plus-plus.org/>)

You need to install the XML plug-in that allows to verify XML and XSL file and to test XSL transforms before they are set up in a Job Ticket Hotfolder.

Free of charge tools for macOS are TextMate, TextWrangler or Komodo Edit. They offer syntax highlighting and some of them simple XML validation. XSL transformations are not supported within these tools.