

XML Import

An Exchange File Specification For Near-Field Scan is being developed as an initiative of Freescale SAS at the UTE French Standard Committee. The specification is based on XML format to exchange near-field scan.

Historical Background

The first proposal for an XML-based Near field scan data format has been described in [Sicard2005]. It includes a very general idea and lists some proposed keywords.

```
<FORMAT>
<NomProduit>MicroPro</NomProduit>
<Scan_Freq>100000000</Scan_Freq>
<RBW>30000</RBW>
<VBW>100000</VBW>
<Probe_info>Probe 1cm</Probe_info>
<Comment>H field vertical</Comment>
<probe_height>6e-3</probe_height>
<scan_X>50e-3</scan_X>
<scan_Y>50e-3</scan_Y>
<points_X>50</points_X>
<points_Y>50</points_Y>
</FORMAT>
<DATA>
26,8 26,3 28,3 29,6
</DATA>
```

[Sicard2005] Etienne SICARD, Olivier Maurice and Ralf Bruening « Towards a common standard for near-field data exchange », ICONIC 2005, Barcelona.

A second proposal for an XML-based scan format has been described by [Serpaud2007], as part of an EMCPack deliverable. It includes a more precise description of the keywords and hierarchy.

```
<?xml version="1.0" encoding="ISO-8859-1"?>
<?xml-stylesheet href="nfs_file_format.xsl" type="text/xsl"?>
<!-- exchange file of Near-field scan data -->
<nfs>
<Version></Version>
<Filename></Filename>
<Date></Date>
<Source></Source>
<Notes></Notes>
<Disclaimer></Disclaimer>
<Copyright></Copyright>
<Measurement>
<Setup>
<Config>
<Att></Att>
<Rbw></Rbw>
<Swp></Swp>
</Config>
<Preampli>
<Gain></Gain>
</Preampli>
</Setup>
<Probe>
<Name></Name>
<Field_Component></Field_Component>
<Notes></Notes>
<Calibration_Filepath></Calibration_Filepath>
</Probe>
<Component>
<Manufacturer></Manufacturer>
```

```

<Information></Information>
<Img_Path></Img_Path>
</Component>
<Data>
<Data_File></Data_File>
</Data>
</Measurement>
</nfs>

```

[Serpaud2007] S. Serpaud, B. Vrignon, E. Sicard « Common standard proposal for near-field data exchange », EMC Compo 2007
[Vrignon2008] B. Vrignon, J. Shepherd « Exchange File Specification For Near-Field Scan », Version 0.2, March 2008, draft document internal Freescale SAS.

XML format in IC-EMC

The file « scan_component.xml » added to IC-EMC v2.0 (download at www.ic-emc.org) contains the following information :

```

<?xml version="1.0" encoding="UTF-8"?>
<EmissionScan>
  <Component>
    </Component>
    <Setup>
    </Setup>
    <Probe>
    </Probe>
  <Data>
  </Data>
</EmissionScan>

```

Remarks about the implementation of XML in IC-EMC :

Keyword as defined in	Comments
<EmissionScan>	Opens the emission scan section
<Nfs_ver>	NFS template version; example 0.1
<Filename>	Document filename; example "scan_component.xml"
<File_ver>	Revision of the document file: example "1.0"
<Date>	The date of the file generation; example: 23 nov. 2007
<Source>	The XML data source; example "Freescale"
<Notes>	Notes added to the document
<Disclaimer>	Disclaimer information
<Copyright>	Copyright information
<Component>	Opens the component section
<Component><Name>	Component name
<Component><Manufacturer>	Manufacturer description
<Component><Notes>	Notes about the component config; Example : "Full speed mode"
<Component><Image>	Opens the Image subsection
<Component><Image><Path>	Link to the component image ; Example "component_image.JPG"
<Component><Image><Unit>	Image size unit; example "mm"
<Component><Image><Xsize>	Image size in X; example "81.0" (unit defined as mm)
<Component><Image><Ysize>	Image size in Y; example "82.0" (unit defined as mm)
<Component><Image><Xoffset>	Image shift in X

<Component><Image><Yoffset>	Image shift in Y
<Setup>	Opens the Setup section
<Setup><Notes>	Notes about the setup
<Setup><Config>	Opens the Configuration sub-section
<Setup><Config><Att>	Attenuation ; example: "0.0"
<Setup><Config><Average>	Average mode
<Setup><Config><Ref_level>	Reference level; example: "-10"; unit by default is dBm
<Setup><Config><Rbw>	Resolution Bandwidth; example: "3000.0" ; uniy by default is Hz
<Setup><Config><Vbw>	Video Bandwidth; example: "3000.0" ; uniy by default is Hz
<Setup><Config><Swp>	Sweep time; example: "0.143156653" ; unit by default is seconds
<Setup><Preampli>	Opens the Preampli sub-section
<Setup><Preampli><Gain>	Preampli gain; example is "32.0"; default unit is "dB"
<Probe>	Opens the probe section
<Probe><Name>	Probe name; Example: "Freescall_Hz_1mm"
<Probe><Field >	Field measured with this probe; example: "HZ"
<Probe><Notes>	Notes about the probe
<Probe><Frequencies>	Opens the section that gives the list of frequencies available for each calibration point
<Probe><Frequencies><Unit>	Frequency unit of the probe calibration list
<Probe><Frequencies><List>	List of frequencies available for each calibration point; example "40E6 60E6 80E6 100E6 200E6 »
<Probe><Perf_factor>	Opens the probe performance factor section
<Probe><Perf_factor><Unit>	Unit of the probe performance factors
<Probe><Perf_factor><List>	List of probe performance factors according to frequency list; Example "-57.6 -54.5 -52.8 -50 -44 »
<Data>	Opens the data section
<Data><X0>	Absolute X coordinates of the scan
<Data><Y0>	Absolute Y coordinates of the scan
<Data><Z0>	Absolute Z coordinates of the scan
<Data><Xstep>	Added by B. Vrignon, E. Sicard to inform about the scan step in X axis
<Data><Ystep>	Added by B. Vrignon, E. Sicard to inform about the scan step in Y axis
<Data><Notes>	Notes about the data
<Data><Frequencies>	Opens the section that gives the list of frequencies available for each scan point
<Data><Frequencies><Unit>	Frequency unit
<Data><Frequencies><List>	Opens the frequency list; example (in Hz): 2290000.0 4580000.0 6870000.0 9160000.0 1.145E7 3.2E7 6.4E7 9.6E7 1.28E8 1.6E8
<Data><Measurement>	Opens the section that gives the measuring data
<Data><Measurement><Unit>	Measurement unit; example : "dBm"; default is dBm
<Data><Measurement><Unit_x>	Added to declare the X data unit.
<Data><Measurement><Unit_y>	Added to declare the Y data unit.
<Data><Measurement><Unit_z>	Added to declare the Z data unit.
<Data><Measurement><Data_files>	Specify the file path of data measurement
<Data><Measurement><List>	Opens the measurement list
26.0 29.0 2.0 -93.691 -93.726 -91.783 -90.772 -93.52 -91.865 -81.705 -78.408	X Y Z location in "unit_x".. unit (Example mm); followed by measured data (Unit in this example: "dBm") for each frequency defined in the Frequency list (here 10 values);

