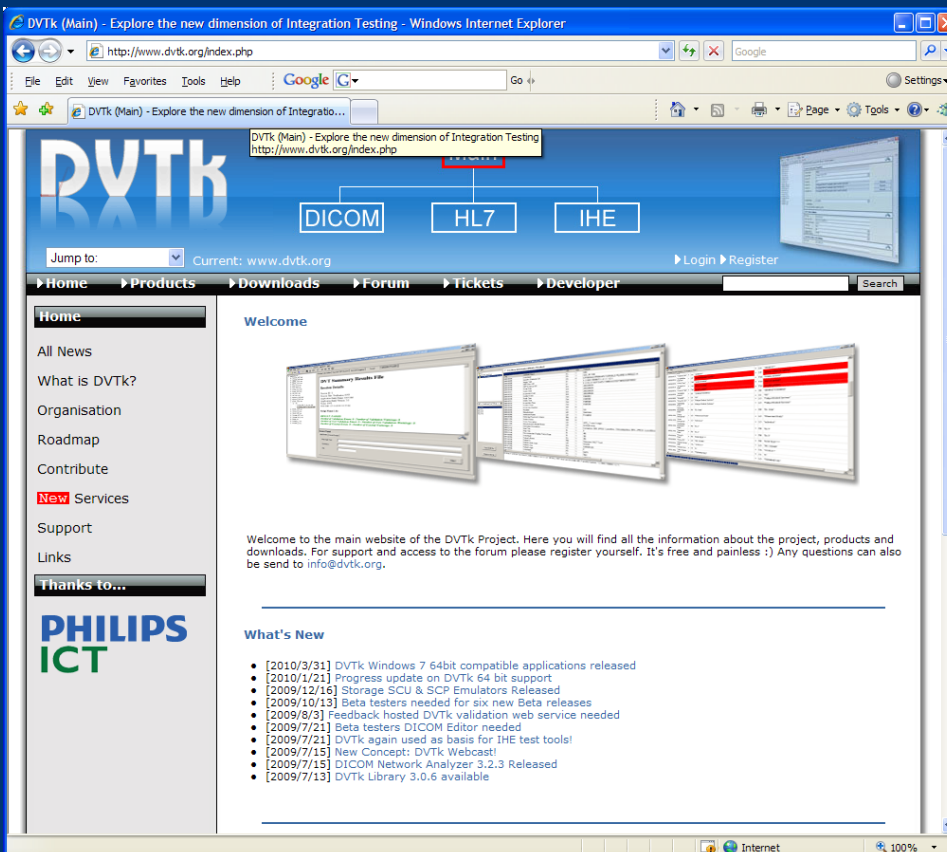


DICONDE Validation Tools

Overview

June 03, 2014

DVTk Project (www.dvtk.org)



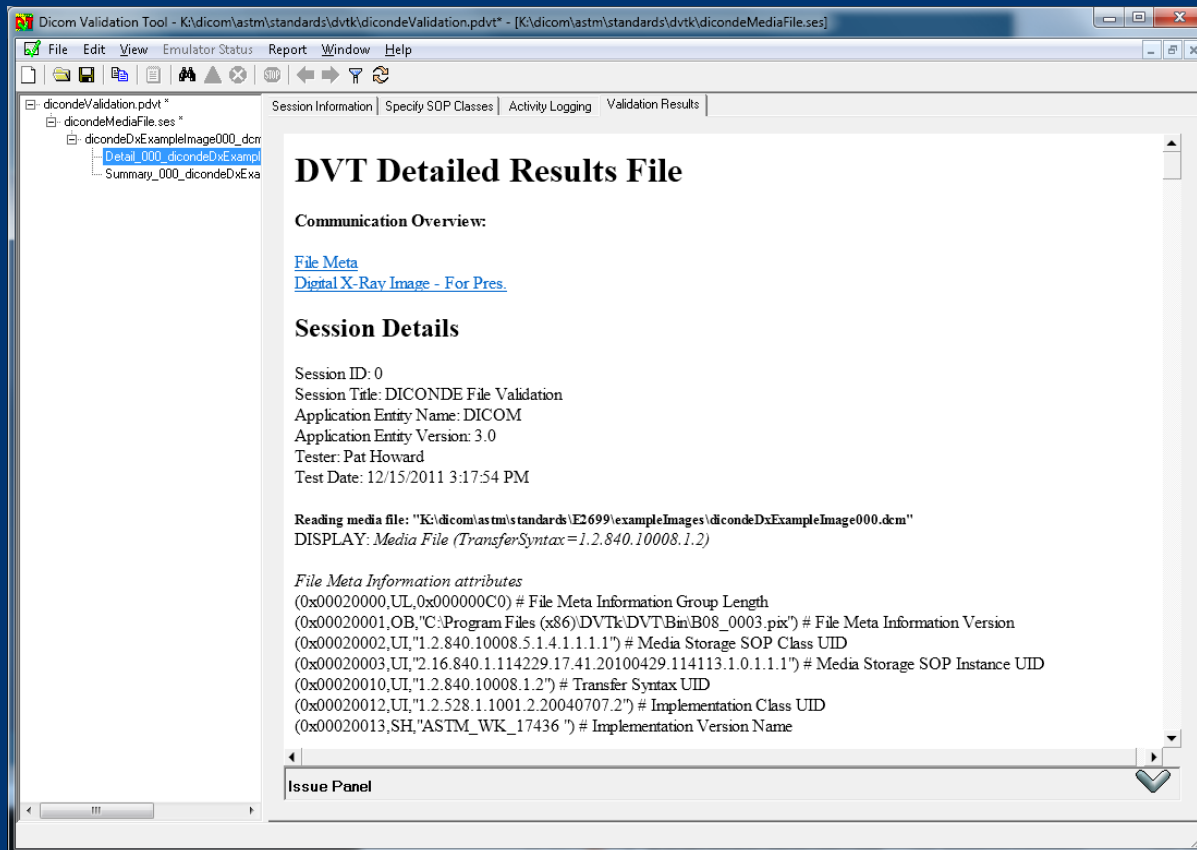
The screenshot shows the DVTk Project website in a Windows Internet Explorer browser window. The address bar displays "http://www.dvtk.org/index.php". The website features a navigation menu with links for Home, Products, Downloads, Forum, Tickets, and Developer. A sidebar on the left contains links for Home, All News, What is DVTk?, Organisation, Roadmap, Contribute, Services, Support, and Links. The main content area includes a "Welcome" message, a "What's New" section with a list of recent updates, and a "PHILIPS ICT" logo at the bottom left.

What is DVTk?

“DVTk is an open source project for testing, validating and diagnosing communication protocols and scenario's in medical environments. It supports DICOM, HL7 and IHE integration profiles.”

- DICOM Anonymizer
- DICOM Compare
- DICOM Editor
- DICOM Network Analyzer
- DICOM Validation Tool

DICOM Validation Tool (DVT)



- Lists all the attributes and attribute values in a DICOM Part 10 file ordered by ascending tag number.
- Compares those values to the required and optional values for the SOP Class.
- Reports missing or incorrect attributes based on DICOM requirements for the SOP Class.
- Displays a formatted report of all attributes ordered by information module

DVTk Definition (.def) Files

- Validation of attributes facilitated by the use of definition (.def) files
- Definition files are located in
 - c:\Program Files\DVTk\DCM Viewer and Validator\definitions
- Files are organized by SOP Class

```
#
# Definition of the CT Image Storage SOP Class
#
DEFINE C-STORE-RQ "CT Image"

SOPCLASS "1.2.840.10008.5.1.4.1.1.2" "CT Image Storage SOP Class"

MODULE "Patient Module" M
(0x00100010,2,PN,1) "Patient's Name"
(0x00100020,2,LO,1) "Patient ID"
(0x00100030,2,DA,1) "Patient's Birth Date"
(0x00100040,2,CS,1,E,"F"
| "M"
| "O") "Patient's Sex"
(0x00100021,3,LO,1) "Issuer of Patient ID"
(0x00100032,3,TM,1) "Patient's Birth Time"
(0x00101000,3,LO,1:n) "Other Patient IDs"
(0x00101001,3,PN,1:n) "Other Patient Names"
(0x00102160,3,SH,1) "Ethnic Group"
(0x00104000,3,LT,1) "Patient Comments"
(0x00081120,3R,SQ,1,
```

Adaptation of DVTK for DICONDE

- Definition (.def) files can be edited to reflect DICONDE requirements
- DICONDE .def files for DVTK located on ASTM website

```

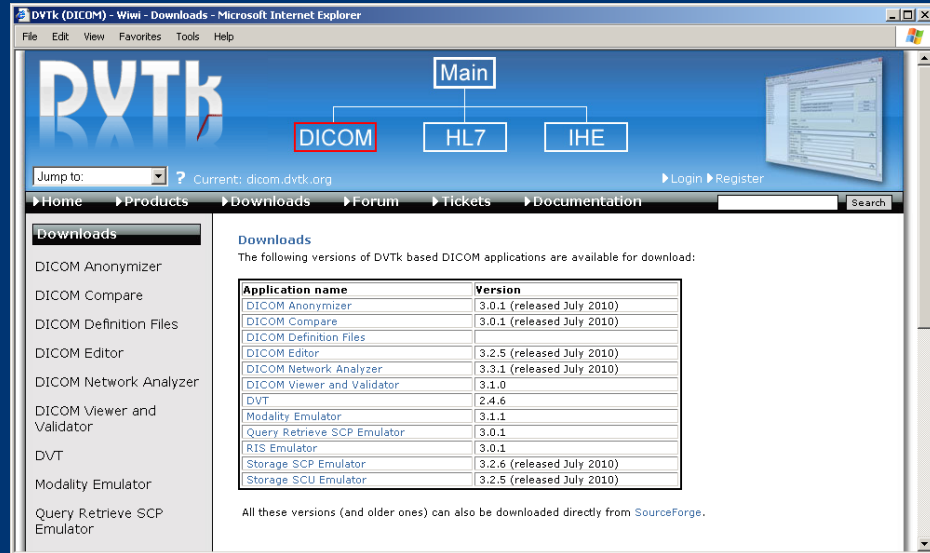
#
# Definition of the CT Image Storage SOP Class
#
DEFINE C-STORE-RQ "CT Image"

SOPCLASS "1.2.840.10008.5.1.4.1.1.2" "CT Image Storage SOP Class"

(0x00100010,2,PN,1) "Component Name"
(0x00100020,2,LO,1) "Component ID Number"
(0x00100030,2,DA,1) "Component Manufacturing Date"
(0x00100040,2,CS,1,E,"") "Patient's Sex"
(0x00101000,3,LO,1:n) "Other Component IDs"
(0x00101001,3,PN,1:n) "Other Component Names"
(0x00104000,3,LT,1) "Component Notes"
(0x00102160,2,SH,1) "Material Name"
(0x0011FF23,3,ST,1:n) "CAD File Format"
(0x0011FF24,3,ST,1:n) "Component Ref System"
(0x0011FF25,3,ST,1:n) "Component Manufacturing Procedure"
(0x0011FF28,3,ST,1:n) "Component Manufacturer"
(0x0011FF42,3,ST,1:n) "Material Grade"
(0x0011FF44,3,ST,1:n) "Material Properties File ID"

```

Installing DVTk



The screenshot shows the DVTk website in a Microsoft Internet Explorer browser window. The page title is "DVTk (DICOM) - Wiwi - Downloads - Microsoft Internet Explorer". The main navigation menu includes "Main", "DICOM", "HL7", and "IHE". The "DICOM" link is highlighted with a red box. Below the navigation, there is a "Downloads" section with a table of available applications and their versions.

Application name	Version
DICOM Anonymizer	3.0.1 (released July 2010)
DICOM Compare	3.0.1 (released July 2010)
DICOM Definition Files	
DICOM Editor	3.2.5 (released July 2010)
DICOM Network Analyzer	3.3.1 (released July 2010)
DICOM Viewer and Validator	3.1.0
DVT	2.4.6
Modality Emulator	3.1.1
Query Retrieve SCP Emulator	3.0.1
RIS Emulator	3.0.1
Storage SCP Emulator	3.2.6 (released July 2010)
Storage SCU Emulator	3.2.5 (released July 2010)

All these versions (and older ones) can also be downloaded directly from SourceForge.

Go to www.dvtk.org

- Download and install the following files from **Downloads->DICOM Downloads**
 - DVT (DVT_2_6_8_0.msi)
 - DICOM Definition Files (definitions.msi)

Note the versions of the files may change as DVTk is updated

DVT Webinar

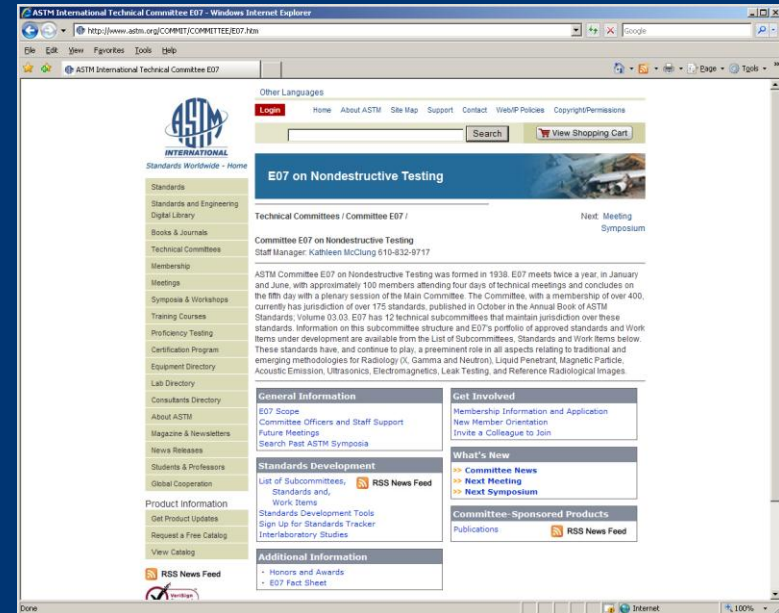


An instructional webinar on using DVT is available at the DVTk website.

<http://www.dvtk.org/modules/wiwimod/index.php?page=webinarinformation>

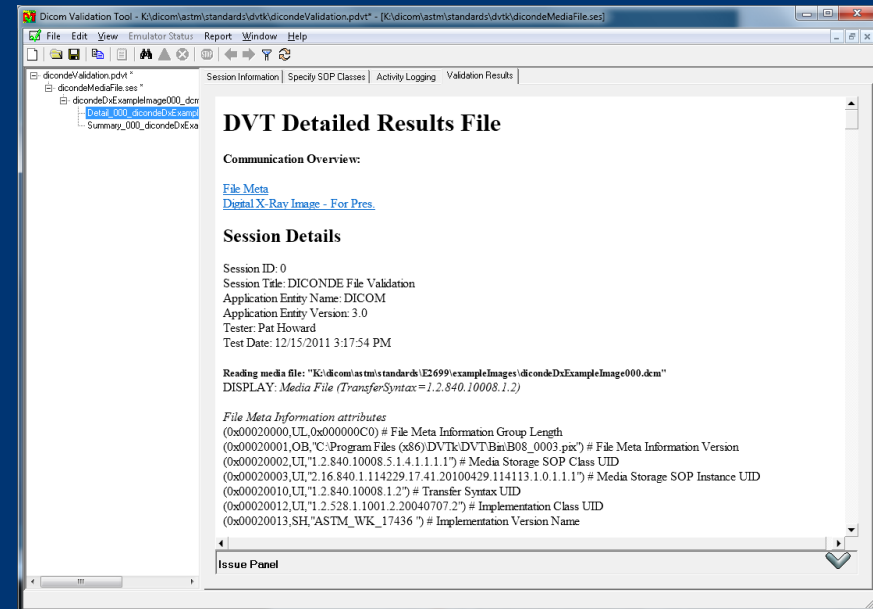
Installing DICONDE Definition Files

- Go to E07 Technical Committee Page on the ASTM Web Site
- Download the DICONDE .def files
- Backup the .def files in “C:\Program Files\Common Files\DVTk\Definition Files\DICOM”
- Copy DICONDE .def files to “C:\Program Files\Common Files\DVTk\Definition Files\DICOM”



Running the DVT

- ❑ Create a “dicondeValidation.pdvt” project file in a working directory.
- ❑ Add a new session file “dicondeMediaFile.ses” of type ‘Media’
- ❑ Choose the directory with the DICONDE .def files for the session file
- ❑ Save the project file with the session added
- ❑ In the left hand window and choose Validate Media File(s) from the menu
- ❑ Select the file to be validated
- ❑ View validation report
 - ❑ Complete list of all attributes stored in the file
 - ❑ Errors for missing or incorrect attributes
 - ❑ Error summary at the bottom of the report



Private Data

- Does not appear to handle relocatable private attributes properly
- Appears to require hard coding of private attribute element numbers within a group
- Posted an inquiry on DVTk Viewer and Validator forum which has not been answered yet

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