



ISO/IEC JTC 1/SC 29/WG 1

Medical Imaging Ad Hoc Group

Chair: Alexis Tzannes, Aware, Inc.

Co-Chair: Touradj Ebrahimi, EPFL

Motion JPEG2000 for Medical Imaging

A new ad hoc group was created at the last ISO/IEC JTC 1/SC 29/WG 1 meeting in Shanghai in Oct. 2002. The purpose of the ad hoc group is to promote the JPEG2000 standards in the medical community. The group is being chaired by Dr. Alexis Tzannes (Aware, Inc, USA) and Dr. Touradj Ebrahimi (EPFL, Switzerland). One of the goals of the Medical Imaging Ad Hoc group is to make the case for the inclusion of Motion JPEG2000 as new transfer syntax inside DICOM. Over the past couple months, with the help of the WG1/DICOM Liaison (Lev Weisfeiler, of Aware, Inc.), members of the group have talked to several people in the medical imaging community and have attempted to collect information about how Motion sequences are used and how the Motion JPEG2000 standard might benefit the medical community.

One of the key advantages that Motion JPEG2000 would provide would be the inclusion of audio information within the same file format. This is useful for including audio such as Doppler frequencies in ultrasound sequences, as well as voice over annotations. For applications where losses cannot be tolerated, Motion JPEG2000 includes a lossless compression option. The scalability of JPEG2000 allows for a lower quality sequence or a lower resolution images to be extracted from the lossy or losslessly compressed sequences.

Other features of Motion JPEG2000 include:

- Table of contents header for easy random search/access.
- Allows for temporal synchronization points between streams
- Allows the use of a single stream for both video/audio
- Well suited for random access to individual frames (important in radiology)
- Quality/resolution scalability useful for generating previews (server-side reformatting)
- Region of interest encoding
- Lossless option for archiving and applications that cannot tolerate any losses.
- Interoperability. As Motion JPEG2000 gets widely adopted, it will make it easy to extract and play sequences on non-DICOM specific software.

Further Information on the WG1 Medical Imaging Ad Hoc Group:

- JPEG 2000 Medical Imaging Applications home pages:
<http://groups.yahoo.com/group/j2k-medical/>
- JPEG 2000 Medical Imaging Applications email reflector: j2k-medical@yahoogroups.com
- Please forward questions and comments to:

Alexis Tzannes (alexis@aware.com) – Chair of JPEG 2000 Medical Imaging Ad hoc group

Touradj Ebrahimi (Touradj.Ebrahimi@epfl.ch) – Chair of JPEG 2000 Requirements group, and co-chair of JPEG 2000 Medical Imaging Ad hoc group