# A connected workplace (part 2)

n the last issue (bit.ly/ENconnected) the need for a mature ophthalmic imaging network was described. In this issue I provide a scoring scheme that can be used to articulate the maturity of existing devices. As with any scoring system, the hope is to quantify any gap between existing and desired maturity. Units may consider using their device maturity scores to evidence the need for investment. To reflect the importance of ophthalmic imaging maturity, the UK Ophthalmic Alliance (UKOA) intend to promote this tool for national use.

# How to determine ODM Level Ophthalmic Device Maturity Level **Connectivity Score** The device is used in isolation. Results are viewed only on the device or from direct Isolated device printouts. No viewing software on consulting The device acts as a server to viewing software on consulting room PCs. If the device is switched off, it is not possible to view results on Device as a server the computers. Results from the device are sent to an imaging server (e.g. Zeiss Forum or HEYEX). Patient details are entered manually on the device the first Networked server Manual data entry time the patient attends. Result from the device are sent to an imaging server (e.g. Zeiss Forum or HEYEX). The device uses worklists, allowing imaging staff to select Networked server Worklists used patients from a list on the device. Patient details are not entered manually. Most mature Least mature **Safety Score** No data is backed up from the device. Device failure results in loss of the single copy of the No data backup electronic imaging results. Frequent (e.g. daily) local backups are made from the device. E.g. CD or external hard drive Local backup Live backups are made via the server. If the Server backup primary data is stored on a server, the server is also backed up.

Figure 1: The ODM level scoring scheme.

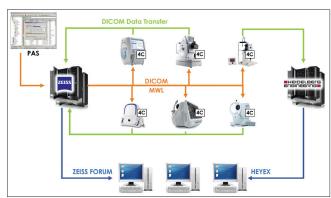


Figure 2: A network of six connected devices, each with an ODM level of 4C.

#### **ODM level**

An Ophthalmic Device Maturity (ODM) level should be determined for each ophthalmic imaging device. Level 1A is the worst and level 4C is the best. The value from 1 to 4 denotes the connectivity of the device. The letter from A to C reflects the level of data backup or safety. Aiming for a level of 4C should be possible for most devices. Some older devices (without DICOM support) will be limited to level 3C. All imaging devices, whether slit-lamp cameras or a mobile B-scanners should be graded. The ODM level scoring scheme can be seen in Figure 1.

Figure 2 illustrates a network of six connected devices, each with an ODM level of 4C. Despite the presence of optical coherence tomography (OCT) devices from multiple manufacturers, all devices still achieve the maximum level possible. To maintain high quality analytic data, two ophthalmic PACS stores are required (FORUM and HEYEX). In this example, FORUM is the primary data store, and acts as the source for DICOM Modality Worklists. Even though the worklist on the Spectralis is populated from ZEISS FORUM, the data is still transferred to the Heidelberg data store (HEYEX). All six devices transfer their data to a server, and worklists replace the need for manual data entry. This earns each device a connectivity score of 4. Both the FORUM and HEYEX servers are backed up, earning the devices connected to them a safety rating of C.

Some aspects of device connectivity are intentionally not captured by the ODM level. Integration with an ophthalmic EPR (such as OpenEyes or Medisoft) is one example. This feature is excluded as it is only available for a few device types (like biometry machines and OCT scanners).

Links to download a PDF of the scoring tool and a data collection spreadsheet are provided:

# Scoring tool: bit.ly/ODMtool Data collection sheet: bit.ly/ODMsheet

The data collection sheet automatically generates a summary report and graph. Get in touch via the email address below if you have any difficulties downloading the files.

Once the results are understood, a prioritised plan to improve them would be a logical next step. The approach will need to be tailored to the scores and existing architecture.

#### Dedicated ophthalmic imaging lead

Management of ophthalmic imaging infrastructure has become sufficiently important (and technical) that having dedicated staff should be considered.

#### Feedback

Please send feedback on this tool to the email below.

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