



WHITE PAPER

Enterprise Imaging

User Interface

Streamlined, uncluttered interface with intuitive features

1. Introduction

Agfa HealthCare Enterprise Imaging offers a completely new user interface built around Agfa HealthCare's 'NICE' user experience design framework. NICE is a framework of design principles within which new applications are developed, with a high focus on usability and productivity. This focus leads to user interfaces that are mostly self evident and thus simple to use, as well as optimized for accomplishing tasks efficiently. All Desktop user interfaces share this common language that helps users learn quickly and work efficiently. NICE user interfaces make users feel empowered.

The next section highlights some of the innovations that stimulated a thorough review of existing user interfaces, to find opportunities for uniting established work practices with new opportunities. This process, including regular support and input by end-users, ultimately led to the compelling new user interface. Section Three explains the NICE principles that underlie this new interface and how they benefit the user.

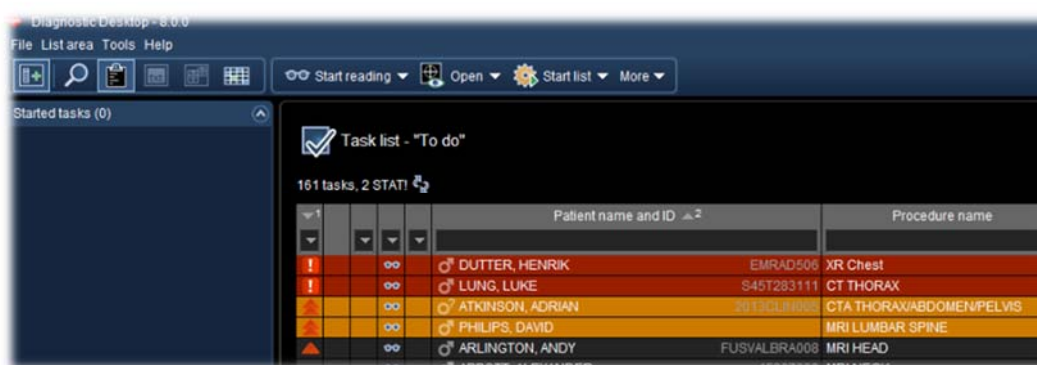


Figure 1 – New, attractive user interface

2. Innovations

The Enterprise Imaging platform offers several innovations that required a thorough revision of the user interfaces of existing products. Among these innovations, the most fundamental in terms of the user interface are: better task coordination between co-workers, improved image viewing capabilities and improved serviceability.

2.1 Better task coordination between co-workers

The Enterprise Imaging solution includes a task management system that allows better coordination of tasks between the healthcare staff in the imaging department. This new task coordination mechanism adds support for (to give a few examples) various concurrent task scenarios such as peer reviews, and the exchange of task items between co-workers. These new possibilities must be displayed in the user interface.

The challenge has been to add the new task concept to the user interface without complicating any of the routine workflows that are already well supported in existing products. In the new user interface, the task concept is most noticeable when configuring (task) lists, but is transparent during everyday activities.

(Additional information about task and workflow management opportunities can be found in the whitepaper on "Task-driven workflows".)

2.2 Improved image viewing and reporting capabilities

Image viewing capabilities have been improved both in terms of end-user efficiency and functionality. Much attention was paid to mouse movement optimization and the reduction of mouse clicks. Another important innovation is the tight integration of viewers for 3D image sets, thin-slice MPR and other clinical applications. These special viewers can now be integrated transparently in the hanging protocols, for optimal reviewing conditions. A plug-in system supports the integration of additional third-party viewers.

Structured reporting is another key addition. Structured reporting makes it easier to compare reports, and to find and analyze information about specific details without reading through large quantities of text. A flexible configuration system allows customers to choose the level and structure right for their reports. Online dictation and voice recognition facilities were also integrated in this new reporting solution.

2.3 Improved serviceability

All configuration and administration tools of the combined RIS/PACS solution have been brought together in a single, coherent Administrator Desktop that provides control over all aspects of the solution. This innovation avoids many of the administrative difficulties of other fragmented departmental software solutions, by eliminating duplicate setup and by offering a standardized user interface across all RIS/PACS configuration aspects.

The Enterprise Imaging platform is very customizable. The quality in use of each desktop will depend on the accuracy with which it is tuned to the needs of the specific site, department and individual user. For this reason, the same meticulous care has been given to the usability of the servicing tools as to the usability of the rest of the solution. A few examples of features improving usability: flexible access to configuration topics (search, recently used topics, browsing, cross-linking between related configuration topics), a fully integrated help system and the WYSIWYG configuration of table columns, search fields and information panes.

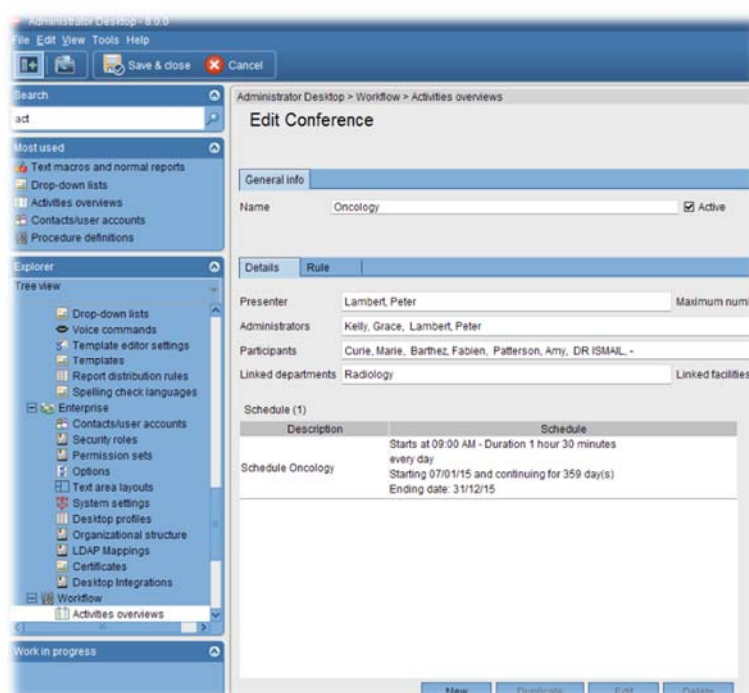


Figure 2 - Administrator Desktop

3. A NICE User Interface

3.1 User-centered development

More than in any previous Agfa HealthCare product, the Enterprise Imaging solution has been developed with a sustained focus on usability. New user interface components have been rigorously designed in an interactive process with frequent input and adjustment from real end-users. Design evaluation began before the first bytes were coded, with validations of paper concepts and low fidelity electronic mockups.

Additionally, early implementations (prototypes) were brought to key customers for user testing and feedback. Iterative versions were tested in simulated use environment. The same process will drive our product innovation for subsequent releases. Product improvements and extensions will be selected based on feedback and experiences from real end-users.

The development process complies as always with the most recent international standards on usability, including ISO 9241-11 "Ergonomic requirements for office work with visual display terminals - Guidance on usability", and IEC 62366 "Medical devices – Application of usability engineering to medical devices".

3.2 One person, one desktop - whatever the task

The Enterprise Imaging suite offers a number of applications, called 'desktops'. A single desktop brings together all the activities of a user with a typical departmental role. Providing all information and tools for all of the user's tasks on a single desktop, frees

the users from the burdens of switching between windows, losing context, dealing with synchronization issues, and so on. Enterprise Imaging goes further along this path than any previous Agfa HealthCare product.

The Diagnostic Desktop for radiologists and cardiologists supports tasks such as study viewing, reporting, order review/protocolling support, etc., all from one coherent desktop. The Technologist Desktop supports typical technologist tasks, including image acquisition, study preparation and follow-up, quality control tasks, etc. Using the Administrator Desktop, system administrators and departmental coordinators can configure and monitor any RIS/PACS configuration aspects.

Each of these desktops is integrated in the common task management system, allowing fluent coordination of tasks, both ad-hoc for non-standard situations, and automated for routine workflows.

3.3 Self-evident user interface

Poorly designed interfaces leave the user feeling confused. The user may need to consult manuals, take training or get help from others. Complicated interfaces also result in more user errors. A good interface makes the same user feel competent. It builds on the user's existing knowledge and is self-evident. The Enterprise Imaging solution avoids unnecessary risks and user annoyances, with a simple yet sophisticated user interface.

With self-evident user interfaces, users are spared time-consuming, lengthy trainings. This applies both to users who are already familiar with existing Agfa HealthCare products, and those who are not. This self-evident character is also a requirement for the continuous innovation and improvement process that the solution offers.

Agfa HealthCare foresees frequent releases of new versions of the Enterprise Imaging platform, gradually extending and refining the product. Customers must upgrade their installation shortly after a new version is released. This upgrading process will ensure that users are always working with the latest and highest quality version of their desktop. Some updates will bring noticeable changes in the user interface, as existing workflows are gradually extended and refined. Two strict guidelines for development will ensure that users feel comfortable with this gradual process of innovation:

- Adaptations to existing user interface components will happen piecemeal
- User interfaces must be self-evident, especially those involved in frequently-used or safety-critical tasks.

3.4 Focus on productivity

Much attention was placed on mouse movement optimization and the reduction of mouse clicks. In the image area, specialized tools provide faster zooming, panning and window leveling, while dynamic toolbars offer the right tools in the right context.

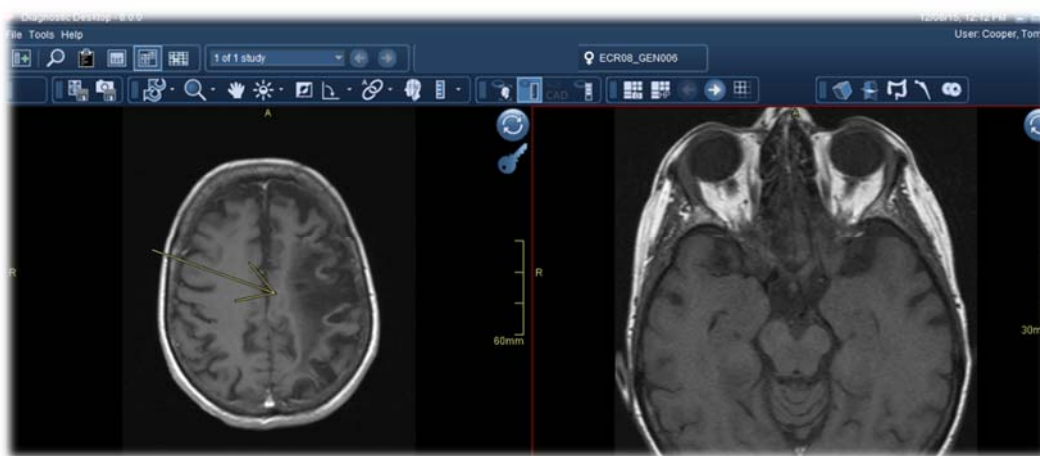


Figure 3 – Specialized tools

3.5 Pleasant to work with

The Enterprise Imaging clients have an attractive user interface and a contemporary graphical style with aesthetic integrity. This means that it is pleasing to the eye, but not so prominent as to distract the user's attention.

The user interface follows well-established user interface patterns, standard controls and behaviors. The windows are clutter-free and guide the user to accomplish the task at hand.

4. Summary

This white paper presents some of the Next Generation innovations that have driven a review of existing user interfaces. It discusses how Agfa HealthCare's Enterprise Imaging suite brings features of RIS, PACS and Reporting tools together in desktops that are specific for each user profile. Each of these desktops has a task-centric user interface, based on Agfa HealthCare's NICE user experience framework. NICE principles help users to learn quickly and work efficiently, with a compelling interface that enhances the application's functionality. The new NICE user interface directly impacts performance and ease of work.

Agfa HealthCare, a member of the Agfa-Gevaert Group, is a leading global provider of diagnostic imaging and healthcare IT solutions. The company has nearly a century of healthcare experience and has been a pioneer on the healthcare IT market since the early 1990's. Today Agfa HealthCare designs, develops and delivers state-of-the-art systems for capturing, managing and processing diagnostic images and clinical/administrative information for hospitals and healthcare facilities, as well as contrast media solutions to enable effective medical imaging results.

Agfa and the Agfa rhombus are trademarks of Agfa-Gevaert N.V., Belgium, or its affiliates. All other trademarks are held by their respective owners and are used in an editorial fashion with no intention of infringement. The data in this publication are for illustration purposes only and do not necessarily represent standards or specifications, which must be met by Agfa HealthCare. All information contained herein is intended for guidance purposes only, and characteristics of the products and services described in this publication can be changed at any time without notice. Products and services may not be available for your local area. Please contact your local sales representative for availability information. Agfa HealthCare diligently strives to provide as accurate information as possible, but shall not be responsible for any typographical error.

Copyright 2015
Agfa HealthCare NV
All rights reserved
Published by Agfa HealthCare NV
B-2640 Mortsel – Belgium
5U2PX GB 00201508