cox-radiology.org

Internet-based Continuing Education for Interdisciplinary Radiology

COX (Case of the Day, the Open Source X-ray Gallery)

COX is a medical e-learning platform for Radiology. The basis is an extensive collection of radiological cases which has, in the last few years, been created at the Institute for Diagnostic and Interventional Radiology, University Hospital Frankfurt am Main, and has been growing constantly by volume. COX offers a unique portfolio with approximately about 1450 cases and 30,000 images, among which many are 3D reconstruction images. The platform features a Learning-Management-System for the realisation of descriptive and unique collection of cases, which allows efficient production and management of didactically structured CME-courses.

Technology

The SQL-based image-data-bank is integrated into the Content-Management- and e-Learning-System ZMS. ZMS is a Zope-product which has been developed from the object-oriented programme language Phyton- favoured by Google. The whole framework uses an Open-Source-Technology and can be accessed from any network system.

The case-data in the platform can be exchanged in both ways with a third system through the MIRC-interface (Medical Imaging Resource Center at RSNA). The unique author system allows a multi-linguistic representation of the image-markings (ROI – Regions of interest) and its logical interconnection with learning materials. Especially developed for medical use, the Content-Management-System ZMS offers the clinicians a productive author-system with comprehensible compilation interface.

SCORM – e-Learning with international standards.

The Sharable-Content-Object-Reference-Model is a standard model for worldwide exchange of learning materials and allows a system-independent access and protocolisation of learning activities. The content of COX are automatically SCORM compatible and is therefore not only importable internally but also from a third system. On the other hand, the existing contents can be integrated into the COX platform through the SCORM interface.

COX at practice

- e-Learning and Content-Management-Platform for Radiology.
- Suitable for CMEs and classroom teaching for medical students.
- Production of multilinguistic courses and case presentation.
- ROI author-system for didactical utilisation of image-series in image analysis and for testing ones success rate during the learning process.
- Standard interface for import and export of cases and courses: SCORM, MIRC
- Free open-source technologies (Zope/ZMS, Phyton, MySQL, XML)

Through the flexibility that the Content-Management-System offers, one can reproduce an already-created theme-module in different course or classroom scenarios: CMEs, teaching medical students or for continued education of staff members. COX, with its course-oriented user-groups-management and through expansion of the content likewise time-determined interaction modules (chat, group forum etc.), is the ideal supplement for blended-learning-course models. Besides the complete replication of the platform and its software surroundings, the COX-courses can be integrated into an existing web surrounding through external authentication-interface (DocCheck, LDAP, etc.).