

Multimedia Content Management Services (MCMS)

From the authoring to the delivery of multimedia information for mobile and wearable industrial applications.

Introduction

According to the architectural specifications defined in the WearIT@Work software framework and taking into account the user requirements and the technological baseline needed to support multimedia content management for mobile and wearable applications, a suitable core set of services has been designed and developed.

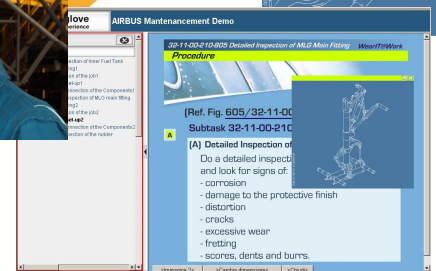
Multimedia Content Management Services

In practice, all the mechanisms for supporting the overall process of multimedia content authoring, publication and delivery is available within the WearIT@Work framework. Several delivery modalities are considered, in order to enrich the access to relevant information from a wear-able/mobile device. In particular:

- personalized delivery (adapted to the user's needs and preferences)
- customized delivery (adapted to the "physical" constraints that affect the information presentation, e.g. display size, available transmission bandwidth, etc.)
- location-based delivery (selection of contents according to the user's current position)

Suitable content processing functionalities have been integrated aiming at obtaining a real time adaptation of the delivered information, considering both the characteristics of the output device, the current context and the user profile. In practice, independently from the specific application domain:

- the multimedia contents, as well as their internal structure, are represented and de-scribed in XML or derived languages (e.g. S100D). Suitable information objects models will be designed and made available to this end and to be used during the content editing process.
- the contents are transformed on-the-fly through suitable templates, which have been realized using the Extensible Stylesheet Language (XSL).



The **WearIT@Work** project, has been funded by the European Commission in the FP6 - contract N° 004216 - under the strategic objective "Application and services for the mobile user and worker".

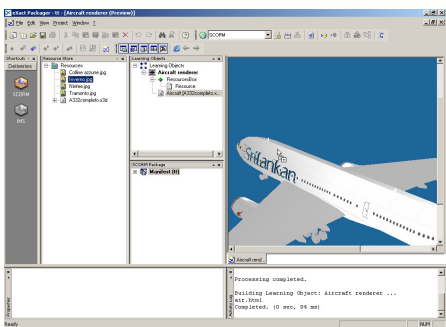
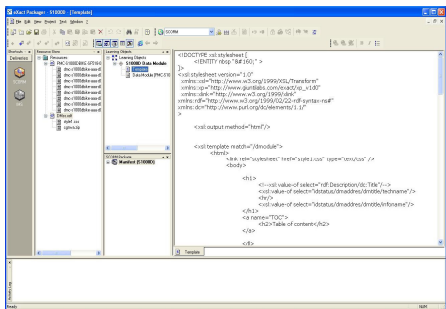
With a consortium of 42 partners and a project volume of 23.7 M€, it can be considered as the largest research project world-wide in wearable computing.

<http://www.wearitatwork.com>

As partner in the consortium, **GIUNTI Labs S.r.l.** has been in charge of developing a complete set of services for the creation, management and delivery of multimedia complex contents suitable for fruition through mobile/wearable technologies.

<http://www.giuntilabs.com>





Main features

Following high-level features are provided by the latest version of the MCMS:

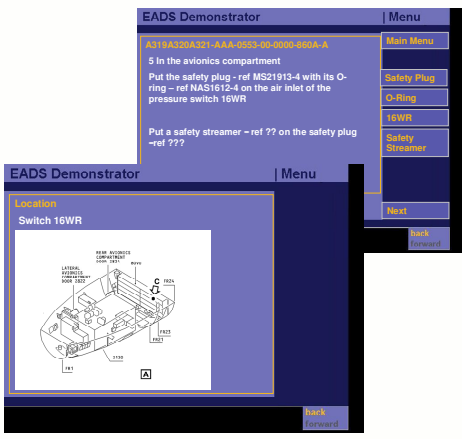
- Multimedia contents (information objects) authoring, creation and management
- Content delivery and real-time adaptation to both environmental constraints (customization) and user preferences and needs (personalization)
- Location-based and, more in general, contextualized delivery of information
- Rendering, presentation and visualization of relevant information on wearable/mobile devices
- Information navigation management through innovative metaphors and methodologies
- Content indexing, storage and retrieval
- Metadata management and semantic-based access to information
- Content and user actions tracking (according to the SCORM 1.2 specification)
- Supported creation of domain-specific multimedia contents through the adoption of ad-hoc formats and XML-based specifications (e.g. S100D for technical documentation, X3D and VRML for three-dimensional models of objects)
- User-related personal data management
- Portal-mediated secure access to relevant information (login, contextual authentication and authorization, etc.).

Future developments and usage

The Multimedia Content Management Services have been extensively adopted for developing the maintenance application, where they are used to create, manage and deliver task-dependent technical information (e.g. text, images, videos, electrical and mechanical schemas).

However, within a continuously and rapidly growing market for advanced mobile/wearable – information-intensive - solutions, the MCMS represents a complete platform for creating, managing and delivering multimedia information objects and knowledge whenever and wherever needed by a user.

Integration of the content management subsystem services into other, more complex, architectures will be supported By Giunti Labs S.r.l., as well as the development of a variety of end-user applications on top of them.



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