Tourism is an important part of the European economy. Unfortunately, Information and Communication Technology (ICT) systems in this sector often follow different data standards and different process management systems. A resultant lack of interoperability hampers collaboration across borders and between players.

In 2008, a CEN Workshop on eTourism was established. The aim was to develop recommendations on how to overcome this lack of interoperability. The work was done by a group of experts with the involvement of different stakeholders from the tourism industry. The results are documented in a CEN Workshop Agreement (CWA). The CWA provides an overview of ICT issues, a case study of ICT use in the tourism sector, and recommendations on how to harmonize and mediate between existing standards and methods.

The draft CWA is available for comments until April 2009 at www.cen.eu.

The continuing growth of the tourism sector, and the presence of a large number of SMEs, underscores the importance of this sector to the European economy. This CWA will facilitate stronger economic growth for industry players, and greater convenience for users of tourism services.
ICT
Interoperability between systems and electronic data interchange are critical to the success of the tourism industry. Though tourism is at the forefront of ICT adoption in marketing and online sales (B2C), it has poor technology uptake in other areas. Inadequacies are most evident in the deployment of ICT infrastructure, and the adoption of e-integrated business processes (eBusiness W@tch Report 2006/2007, www.eBusiness-Watch.org). This CWA will facilitate the spread of ICT in tourism.

APPROACH
The successful exchange of electronic data hinges on two things: the ability of all tasks to understand the data – i.e. data interoperability – and of the ability of the processes to meaningfully cooperate – process interoperability. This draft CWA addresses these two core issues ‘data’ and ‘processes’, and related challenges. In particular, we have identified five topics for further analysis: semantics, data transformation, process handling, metasearch and object identification.

These five topics are placed in the context of four general concerns. Tourism transactions on the one hand regularly transcend national and cultural boundaries, and frequently involve both very small and very large players. On the other hand, many of the parameters – rating systems for accommodation, opening hours of sites, classification of beaches – are regulated nationally or even regionally. All transactions must naturally follow pertinent national or regional laws and regulations. This leads to the four concerns that cut across the system: legal issues, multiculturalism, business models, and technology.

THE FIVE CHALLENGES

Semantics: The meaning and structure of data is at the heart of data interoperability – and one of the greatest challenges. Widely accepted norms, in terms of the semantics in eTourism applications, are fundamental to the successful integration of varied data structures. It is also a central requirement for the building of flexible, cross-organizational process chains.

Data transformation: The co-existence of many different formats requires the transformation of data during exchange. This mapping can affect data structures on different levels:

→ Meta data: Ontologies and taxonomies;
→ Structured data;
→ Unstructured data.

Together with semantics, data transformation is essential to the integration of sources and the building of cross-organizational processes.

Process handling: The World Wide Web has significantly boosted the use of ICT in the tourism industry and empowered customers to make their own travel arrangements. This requires the successful interplay of many different computer systems.

Metasearch: Metasearch builds on shared semantics and data transformation to enable searches across different individual components of heterogeneous websites and aggregate the results in a unified list. They thus offer one-stop access to a specific type of information; from a technology perspective, they place high demands on distributed data querying.
The suggested approach is to watch carefully existing standards or approaches, when starting to create something new, and to build upon them keeping differences to a necessary minimum. This harmonization shall help to avoid isolated standards and approaches that make interoperability difficult.

Furthermore, ways should be found to mediate between the remaining differences of existing approaches. The tourism sector has come up with a broad spectrum of different standards and models, and for various reasons it will be difficult, if not even impossible, to replace them. This diversity is also needed to some extend and mediation between them shall help to deal with these differences.

To oversee the market, it is highly recommended to implement a watchtower as a follow-up action within the work of this CEN Workshop, keeping a map of the semantic landscape to support harmonization of data and offering technology and recommendations to mediate between existing standards. HarmoNET, an existing non-profit network, established out of a European project and dedicated to data mediation in tourism, shall be the starting point for this watchtower.

In addition, it is recommended to invest in long-term research on semantic methods and tools, as well as new ways of object identification to continue what has already started in several European projects.

The keywords in this context are harmonization and mediation.

**BEST PRACTICE CASE**

Euromuse.net, the European exhibition portal, has been chosen as a best practice case. It uses the ‘Harmonise’ technology to address the issue of interoperability and demonstrates how problems derived from the five challenges can be solved. This technology, which is the result of a former research project, is able to mediate between different data formats from the cultural, heritage, and tourism sectors. It is thus confronted with very much the same challenges as discussed in the CEN Workshop.

‘Mediation’ has been identified as the key strategy for attaining true interoperability in a highly fragmented and diversified area like tourism. This best practice case demonstrates the best way to reach interoperability by data mediation, while leaving enough flexibility for each partner to define his own data format.

**RECOMMENDATIONS**

The Workshop came up with a number of recommendations that are all centred around the basic idea to deal with the diversity of existing standards, technologies, projects, and entities - rather than bringing another standard to the market. The keywords in this context are harmonization and mediation.

Object identification: Flights have a unique identifier, whereas many other objects in tourism do not. There is at present no universally accepted scheme to identify, say, a given hotel that should be booked, or to compare different offers for the same hotel, or even to precisely reference all tourist areas.
CEN WORKSHOP eTOURISM PARTICIPANTS
Afidium (France) → BIT Reiseliv (Norway) → Centre de Recherche Public Henri Tudor (Luxembourg) → certifida (Switzerland) → CICtourGUNE – Asociación Centro de Investigación Cooperativa en Turismo (Spain) → Community Access Foundation (Austria) → dec2uim (Belgium) → ECCA – Etourism Competence Center Austria → ECTAA – European Travel Agents’ and Tour Operators’ Associations → Edith Cowan University (Western Australia) → euromuse.net → EFCO&HPA – European Federation of Campingsite Organisations and Holiday Park Associations → ETOA – European Tour Operators Association → Fachhochschule Worms (Germany) → Hochschule München – Fakultät Tourismus (Germany) → Fedeturismo Confindustria – Italian Federation of Tourism Industries → FernUniversität in Hagen (Germany) → HOTREC – European Association of Hotels, Restaurants & Cafés → Infoterm – International Information Centre for Terminology → IFM – Institute for Museum Research (Germany) → Krems Research (Austria) → OpenJaw Technologies (Ireland) → OpenTravel Alliance (USA) → Salzburg Research – Competence Centre for eTourism (Austria) → Smart Information Systems (Austria) → TJC GmbH Knowledge Transfer for the Tourism Industry (Germany) → Travel and Telecom Ltd (UK) → TTI – Travel Technology Initiative Ltd (UK) → Universität Oberta de Catalunya (Spain) → USPI-NL (The Netherlands) → x+o Business Solutions GmbH (Austria)

CEN WORKSHOP eTOURISM PROJECT TEAM
The project team experts for the CEN Workshop on eTourism were: David Faveur, Afidium (France), Manfred Hackl, x+o Business Solutions GmbH (Austria), Marc Wilhelm Küster, Fachhochschule Worms (Germany), Carlos Lamsfus, CICtourGUNE (Spain), The Workshop Chair was Wolfram Höpken, Hochschule Ravensburg-Weingarten (Germany), and Secretary Håvard Hjulstad, Standards Norway.

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ABOUT CEN
The European Committee for Standardization (CEN) is a business facilitator in Europe, removing trade barriers for European industry and consumers. Its mission is to foster the European economy in global trading and promote the welfare of European citizens and the environment. Through its services it provides a platform for the development of European Standards and other technical specifications.

CEN’s 30 National Members work together to develop voluntary European Standards (ENs) in various sectors to build a European Internal Market for goods and services and to strengthen Europe’s position in the global economy. More than 60,000 technical experts, as well as business federations, consumer and other societal interest organizations, are involved in the CEN network that reaches over 480 million people.

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