Semantic interoperability of Civil Status Registers by the International Commission on Civil Status (ICCS-CIEC)

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• UBITECH is an R&D company established in 2005 by a team of Electrical & Computer Engineers
  – concentrated in the Greek, Balkan, European and (lately) in Latin America markets

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  ➢ software engineering services
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  ➢ technical consulting services
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  – e-government (G2G, G2B and G2C) and e-health solutions
  – applications, services and systems’ integration solutions (CIEC)
ICCS Organization – The Activities

- ICCS carries out **studies** and draws up **recommendations** or conventions
  - harmonizing the law of the member States relating to the status and capacity of persons,
- ICCS has drawn up **32 Conventions** relating to civil-status matters
- Convention on international communication by **electronic means**, signed at Athens on 17 September 2001
  - sets up a legal basis for the exchange via IT tools of civil-status data as foreseen in other Conventions
Need for secure and legalized document exchange

Although the trend is obvious we still lack
- Standards Utilization
- Legal Framework
- Reference Implementation

Forecasting of immigration flows until 2025 for selected European countries using expert information, IDEA Working Group, 2009
The scope of the CIEC-ICCS project was:

- to design and implement the open, generic ICCS-CIEC Data Exchange Platform for the cross-border electronic exchange of civil-status documents;
- to define the Civil-Status Applications Schemas (Models) comprising the standardised electronic and machine-interpretable format;
- to implement and deploy the Certificate Authority and Security Infrastructure constituting a certificate and maintenance authority and PKI-based software infrastructure.
Document’s exchange – The electronic era

• ICCS’ conventions
  – Birth
  – Marriage (check status, dissolution)
  – Death

• Convention 30 formulated in the frames of the project
  – Describes Countries' readiness (IT & legal)
Problems Addressed

• Lack of Common format between documents
  – Even the simplest semantic assets are not common among the various countries
• Multilingualism
• Security Policies
  – Digital Signing and Encryption/Decryption processes cannot be harmonized
Interchangeable Unit Structure

• As-is: Manuscript format of Conventions
  – This format is considered commonly accepted by countries
  – It is not machine processable

• Solution: Official Schema representation that represent
  – Forms’ structure
  – Form’s data
Form Structure

• These artifacts have been validated by IT experts

• Direct input to ADMS

• Cornerstone of future interoperability
### Input to ADMS

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<table>
<thead>
<tr>
<th></th>
<th>cbc:URI</th>
<th>cbv:IdentifierID</th>
<th>cbc:Name</th>
<th>cbv:Alternative...</th>
<th>cbv:CreationDate</th>
<th>cbv:LastModified...</th>
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```
Conv.16 – Birth Certificate
Conv.16 – Marriage Certificate
Conv.16 – Death Certificate
Multilingual Environment

• Problem: All User Interfaces and Messages must be adapted automatically

• Solution: A Translation Tool has been created
  – categorizes elements per application
  – tracks the status of translations
  – provides user-friendly way for editing
Multilingual Environment
Registry Office Granularity

• Problem: Semantic Mismatch between regions & ROs

• Solution: A Demarcation Tool has been developed
  – Tracks correlations between regions & ROs
  – Versioning support
  – Snapshot management
# Registry Office Granularity

## List of Municipalities

<table>
<thead>
<tr>
<th>Name</th>
<th>Service de l'état civil</th>
<th>Division</th>
<th>CodeCommune</th>
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### Services de l'état civil

- Service central de l'état civil
  - Strasbourg

### Division administrative

- FR
  - Départements
    - Communautés
    - Communes
    - Large Communes
    - Revendications
Beyond ICCS...

- **RENAPER @Argentina**
  - Registro **Nacional** de las **Personas**
  - Part of Ministry of Interior
  - Organizes Civil registries

- Integration among 24 provinces
Follow-ups to CIEC Project

• End-to-End Interoperability;
• Electronic Services to Citizens (G2C);
• Electronic Services to Third Party Organizations (G2G);
  – Electronic Services (Secure Data/Documents Exchange) to Notaries and Justice Organizations
Thank you for your attention!
Questions or more Info?
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