DATEX II – Work Item 5
VMS Model

Mare Nostrum meeting

June 10th, Paris

Summary

- Describe DATEX project ES5 context
- DATEX - Mare Nostrum link
- Scenarios for VMS information exchange
- Principles of VMS modeling
- Next Steps

DATEX European Study ES5

In the framework of Easyway ES5 is involved in data exchange between Centres and Service Providers and is focused in

- Up to date IT Technology (web services, protocols, XML etc)
- Content Modeling (UML based)
  - Situation Modeling
    - *Traffic Elements*
    - *Operator Actions*
    - *Environment Conditions*
    - *Road Conditions*
    - *Non road event*
  - Measured Data
  - Elaborated Data
  - Location Referencing
- Standardization issues

DATEX and Mare Nostrum liaison

VMS are a technology more and more Extensively and Intensively used nowadays:

- To inform road users on:
  - Danger Situation
  - Traffic disruption
  - Environmental Conditions
  - Travel Times
- To manage traffic for
  - Alternative Itineraries
  - Advices

Automatic Data Exchange is desirable:

- Transport Network is more and more integrated at national and international level,
- Many TMC manage several interconnected roads and motorways
- Real Time

Mare Nostrum ES5-ES6 link to be addressed

Inter Centre VMS management Scenarios

Two examples of VMS management inter Centres are showed in the following pages, to show the context in which the exchange of VMS information is needed

Nevertheless the aim of this study is to model VMS Information (Tehcnical Aspects, Displayed Messages and Status) in order this model will allow in the future to further analyze several use cases and scenarios

Information Exchange and VMS management

1° Scenario: Road Information is exchanged to manage VMS according to common agreed rules (user cases in Italy)

1. **Traffic or Environmental Information is exchanged one way**

   current DATEX Situation Exchange

2. **VMS are managed by the TMC**

   managed according to the agreed rules

3. **Information about VMS usage is exchanged back**

   to check VMS management

   - Common management rules needed (Mare Nostrum)
     - Standardized Messages and Pictograms
     - Priority Rules
     - Coverage Area Agreement

In Italy this has been made according to EU and IT Mare Nostrum results

2° Scenario: Proposal of VMS management has to be exchanged and agreed (similare to TMP plans agreements)

- **Proposal of Exchanged Messages to be delivered by other TMC VMS**

  in order to adopt more suitable information or for better traffic management a TMC may propose messages to be submitted to VMS

- **Approval of Rejection of messages**

  these messages may be accepted or rejected based on more several problems that should be running on the road or known to the VMS owner.

Current DATEX2 VMS modeling

2006 UK proposal for management of VMS

- **For Barcelona demostrator June 2006**
- **Inside Situation Publication**
  - Publication Available
  - Linked to Situation Element (Event)
- **Model lacks**
  - not complete
  - does not consider all VMS types
    - Missing multipage VMS

Proposed VMS Model

Scope of the new model is to describe VMS information

to be used within

- Situation Publication
- New dedicated VMS Publication

Starting from 2007-2008 VMS Model agreed between UK an IT based on some Mare Nostrum results (e.g. picto list, known VMS appearence and usage)

Model needs to fully describe VMS

- Geographic position
- Technology
- Appearence
- Usage, Displayed message
- Status

VMS modeling

- **Several Types**
- **Several Usages**

where is it?

Location

- DATEX2 Location is suitable for usage for VMS modeling
  - Position (fixed or mobile)
    - *Along the Road*
      - *Between points*
      - *Near to point / exit / junctions*
    - *At main road or motorway Entrance*
    - *On carriageway intersection*
    - *On point*
  - Lane correspondance
  - Any other

VMS structure

- Text
  - Number of Rows and characters per row
  - Graphical matrix text, variable font

and/or

- Pictogram(s)
  - Predefined / Coded
  - Graphical
  - Position relative to text (if exixts)
  - Position relative to primary pictogram if secondary

and/or

- Flashing lights

how is made ?

Technology

- Led / others
- Vendor / model
- Failures
  - Main information on failures
  - Working or not

what does it display?

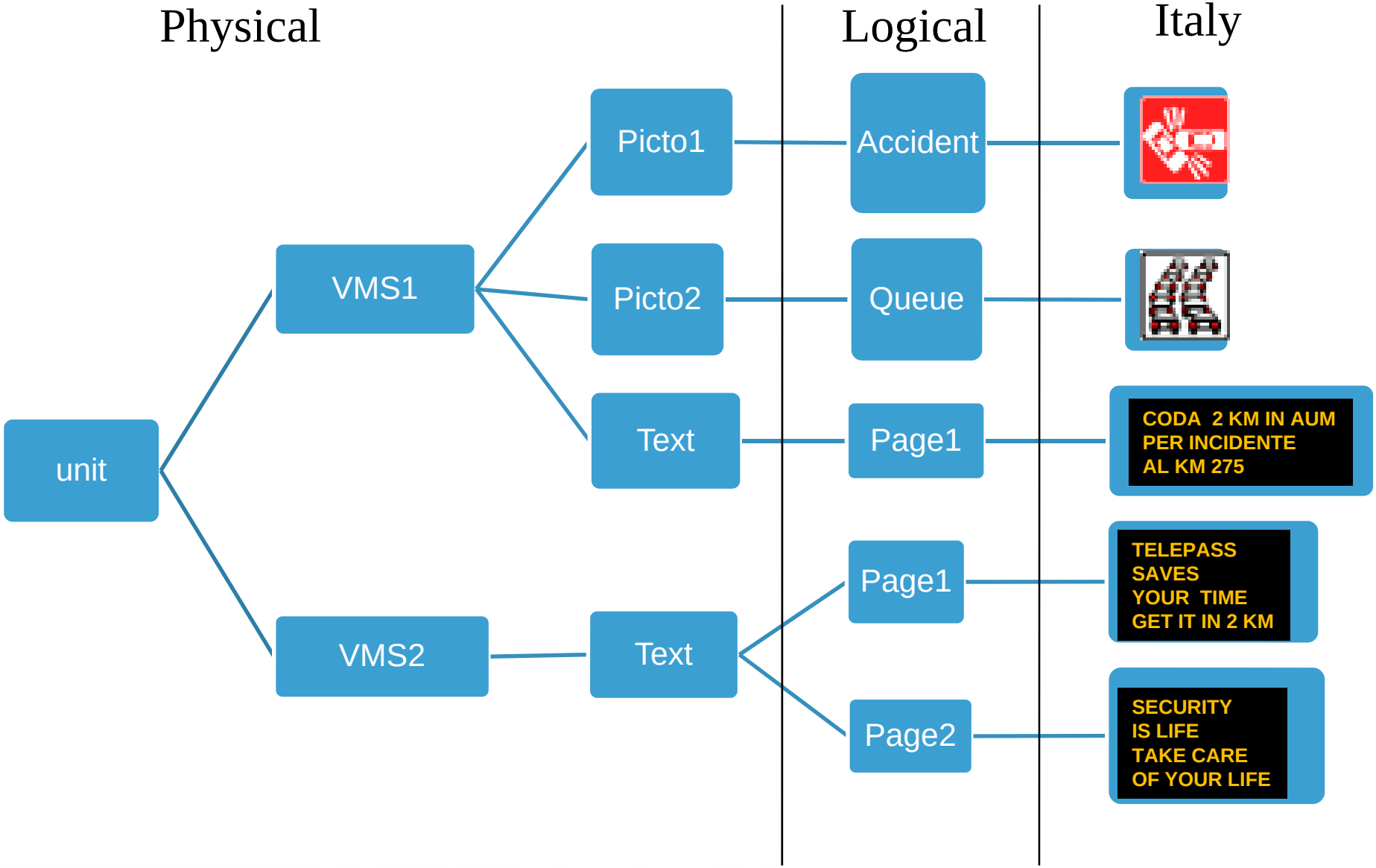
VMS Usage

- 1 or n pages of Text
  - Flashing text

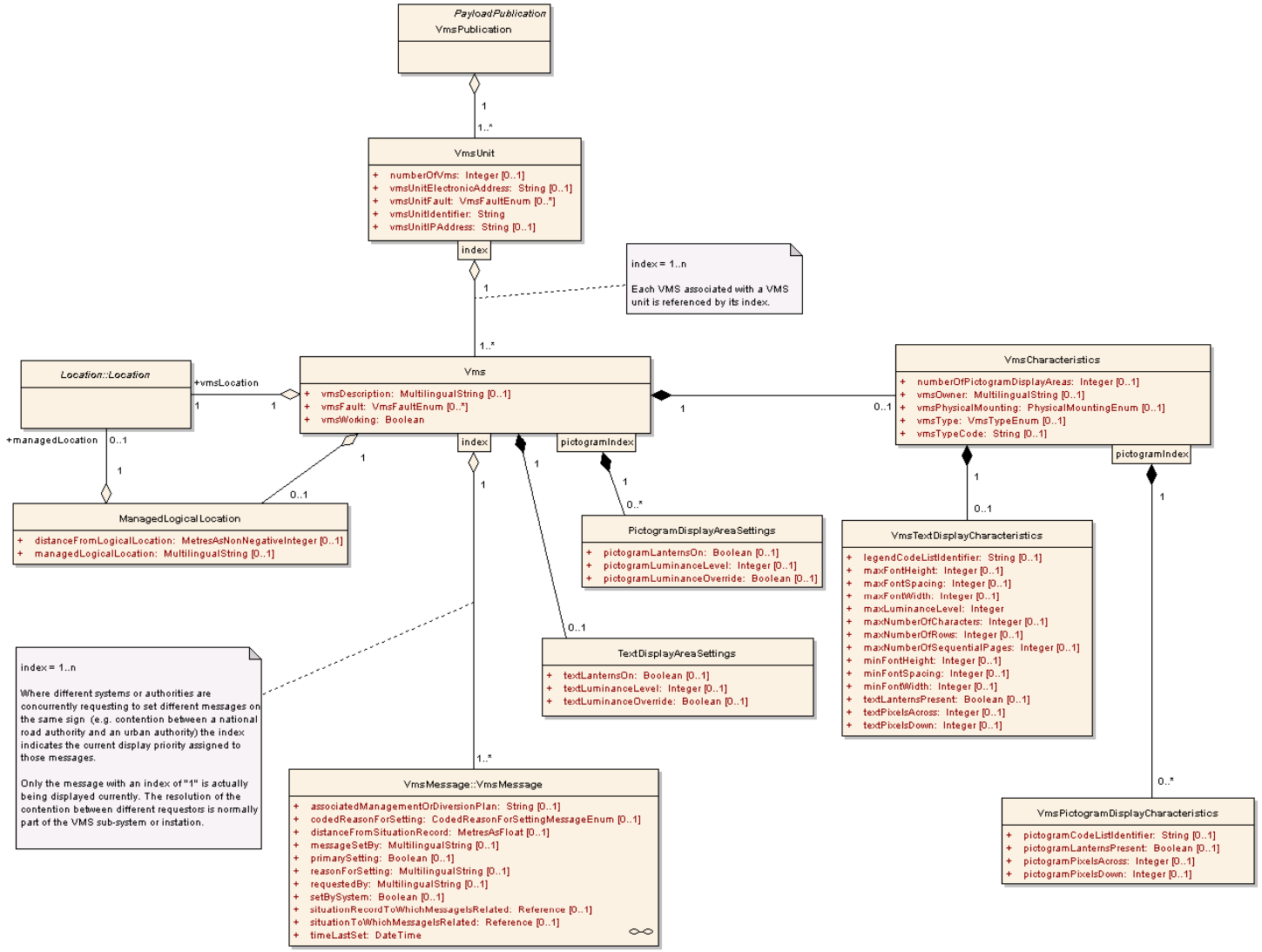
and/or

- Pictogram(s) displayed
  - 1,2, n
- Other graphical → gif URL to see image

Componente Hierarchy



Have a look at the model



Needs for a DATEX VMS Publication

VMS information may vary for different reasons

- Road Situation
- Travel Times
- Informational or Security Campaign
- Manual management by operators for various road or not road information (e.g. show, fairs, concerts, strikes, pollution, etc)
- VMS Status (fault, component failures)

DATEX2

- VMS dedicated Publication would optimize Information exchange in all these context
  - Best usage for general information on VMS not related to situation elements
- VMS are now managed in Situation Publication
  - To be improved with the new model

Next steps

Model will be proposed and inserted in 2.0 RC2 version of DATEX in december 2009

- **1° July 2009 - new DATEX website www.datex2.eu**
  - to share model rationale
  - VMS extension will be published
  - Forum discussion on VMS model available

- **IT Demonstrator to ensure model accuracy**

- **end of September**
  - Manage feedbacks
  - agree a common understanding

in order to submit to standardization by December 2009

THANKS FOR YOUR ATTENTION