

# M7.1

# N4C Subsystem Integration Model and Tests

**Presentation from MEIS d.o.o., Slovenia**

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N4C Technical Internal meeting - Member Presentations I (closed session)

Guidelines for partner's presentations:

- What am I doing? (Please use diagrams to illustrate your contribution to the project, e.g. use case diagram)
- Where do I locate my work in the "big picture"? ( location your work on the global diagram of the system)
- Which are the modules that interact with my research modules?
- What are the main interfaces between my modules and the global system?

## What am I doing?

(Please use diagrams to illustrate your contribution to the project, e.g. use case diagram)

## MEIS:

### RESPONSIBLE FOR WP8:

#### TEST AND VALIDATION ON TWO REMOTE TEST BEDS:

(in cooperation with LTU, Tannak and other partners)

- **Ideas** – what to do in tests to show that DTN works (meteo, hunters, animal tracking..)
- Preparation of **SW and HW** for tests.
- All together **3 summer and 3 winter** tests.
- **Elaboration** of test results.

### & WORK IN OTHER WPs (in cooperation with other partners)

- Input to system architecture from test point of view
- Design and developing of applications SW (meteo and other...)
- Selection and test of suitable HW

## MEIS

### WHAT MAJOR TASKS WERE DONE UP TO NOW:

- Study of the **project overall tasks and details**
- Getting familiar with **PROPHET** code, environment and executable
- Getting familiar with **DTN** executable
- Preparation of **summer test in Slovenia**
- With LTU - organisation of **Technical start up** meeting

### WHAT MAJOR DELIVERABLES HAVE BEEN PREPARED:

- **Milestone** report from **summer test**
- **Deliverable on Tests preparation** and Technical start up  
(with LTU, Tannak and with other partners contribution)

### OTHER:

- Dissemination contribuitons

**Where do I locate my work in the “big picture”?  
(location your work on the global diagram of the system)**

Whole project – aim / goal:

**TO MAKE ONE MAJOR STEP FORWARD IN  
DEVELOPMENT OF INTERNET  
FOR REMOTE AREAS  
WITH LITTLE OR NO INFRASTRUCTURE**

Tasks within this frame:

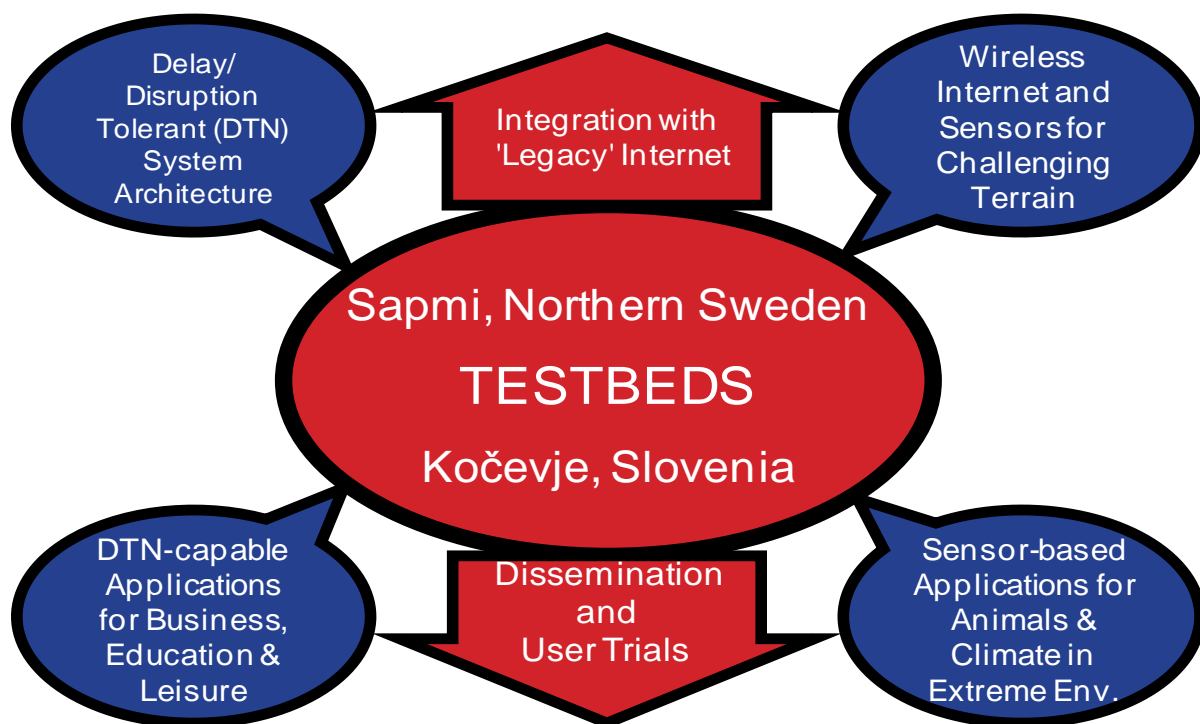
- **New contributions to teoretical approaches for DTN**
- Development of **DTN alhoritms and their SW** implementation (ProPhet and DTN ref.)
- Demonstating that **new developments work on practical life cases** (or even show why not)

Additional tasks:

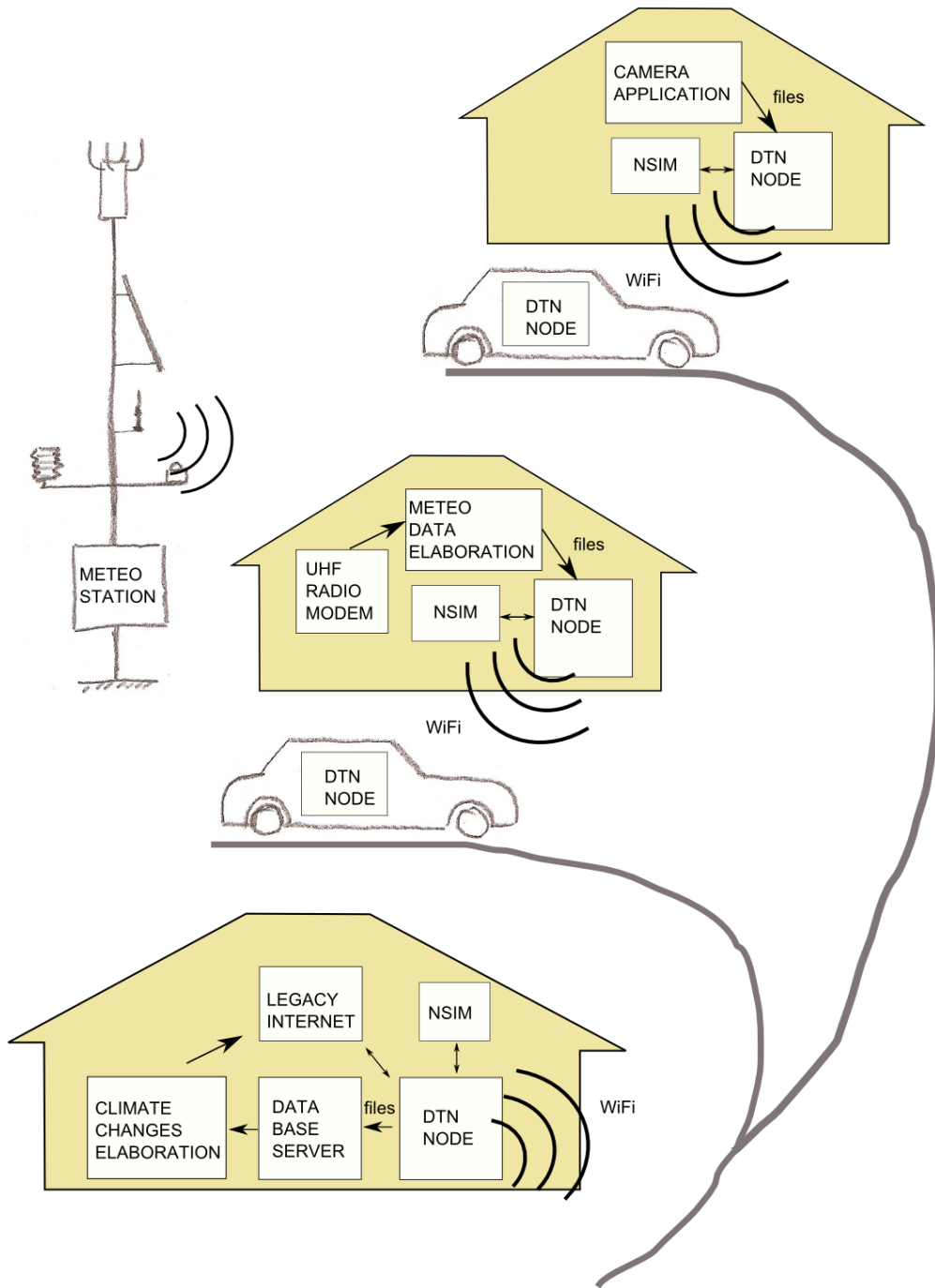
- Selection and development of suitable **HW for above tasks**
- Development of usefull tests **for demonstration**
- Dissemination

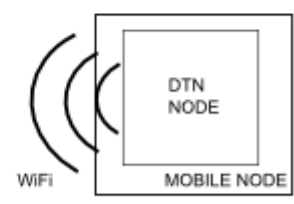
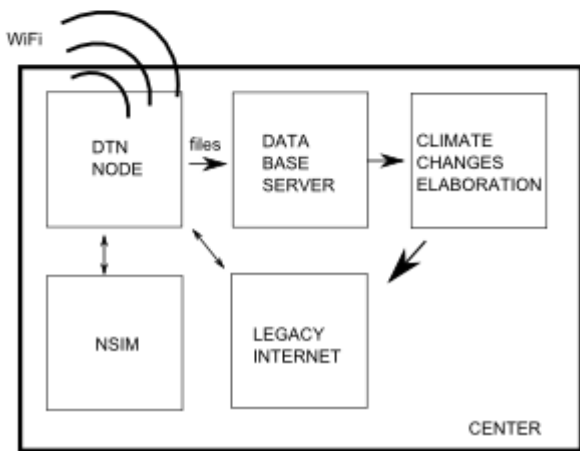
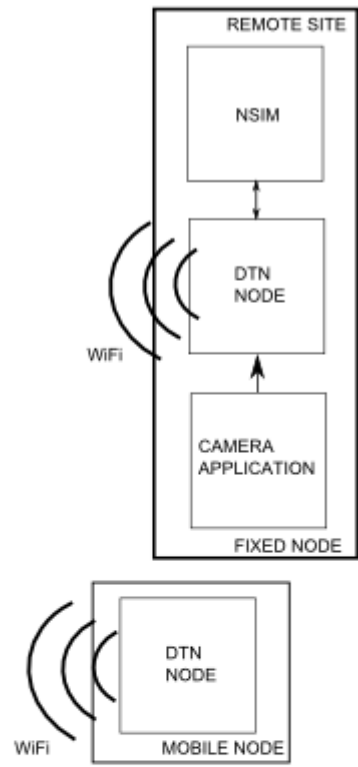
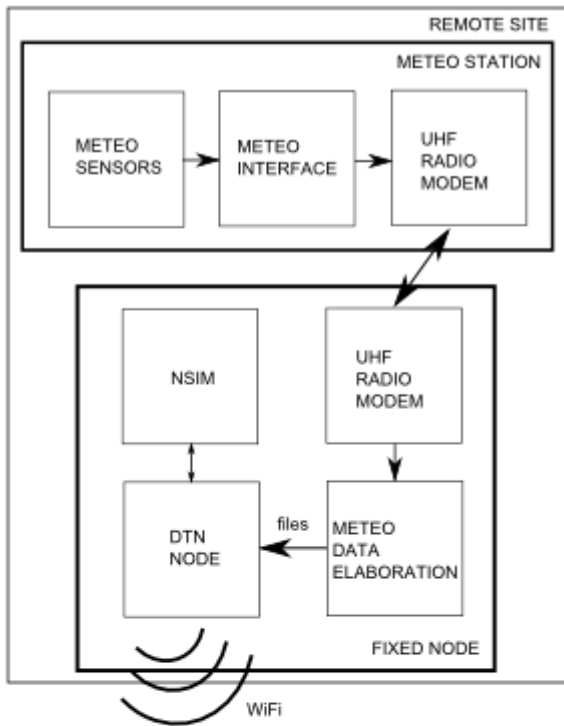
## MEIS main work:

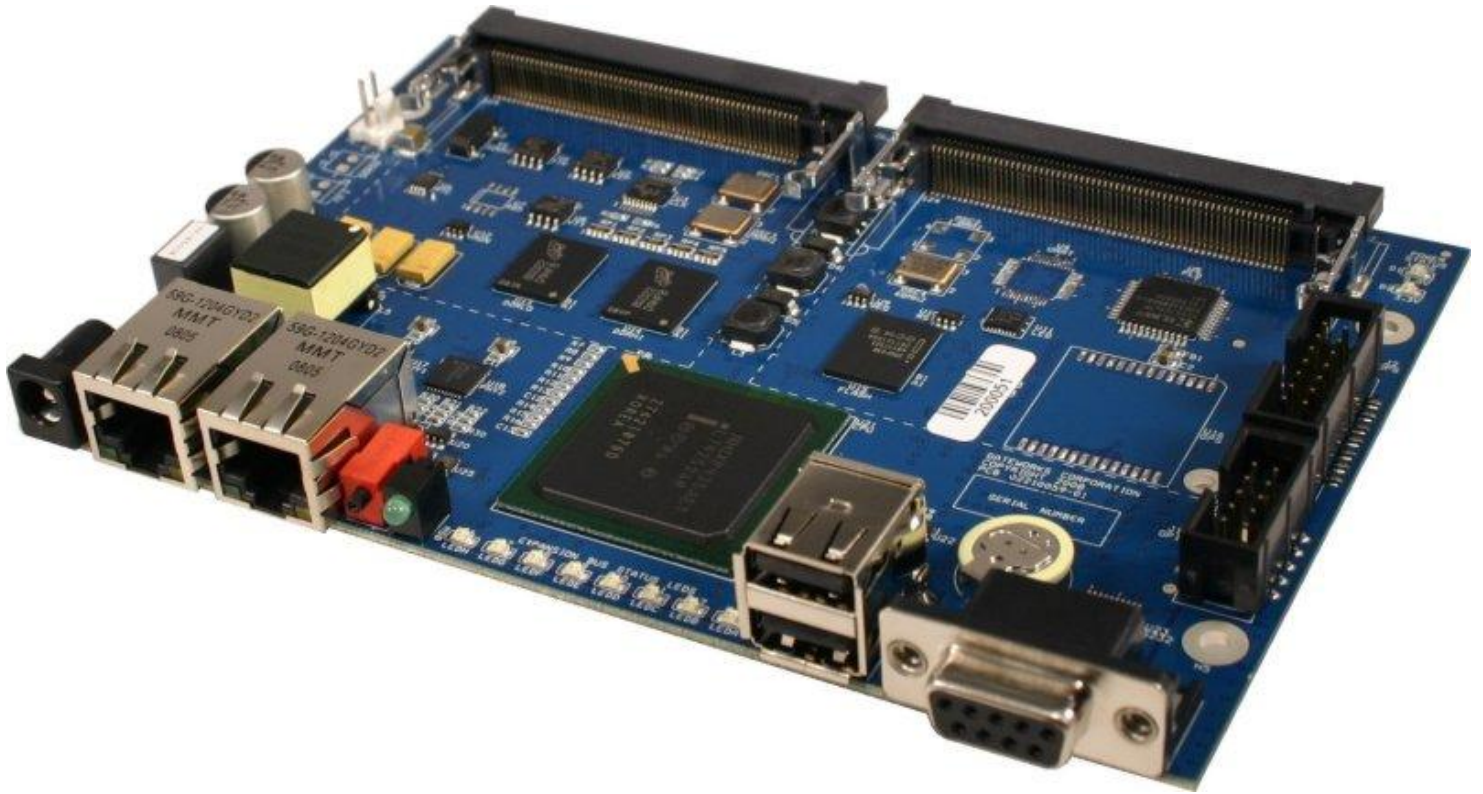
- Contribution to development of »real life« tests scenarios, plans and implementation
- Development of meteo and environmental data collection using DTN (using best engineering practices according to WMO, RG, IAEATEC DOC standards)
- Contribution to other WPs



# Next winter test





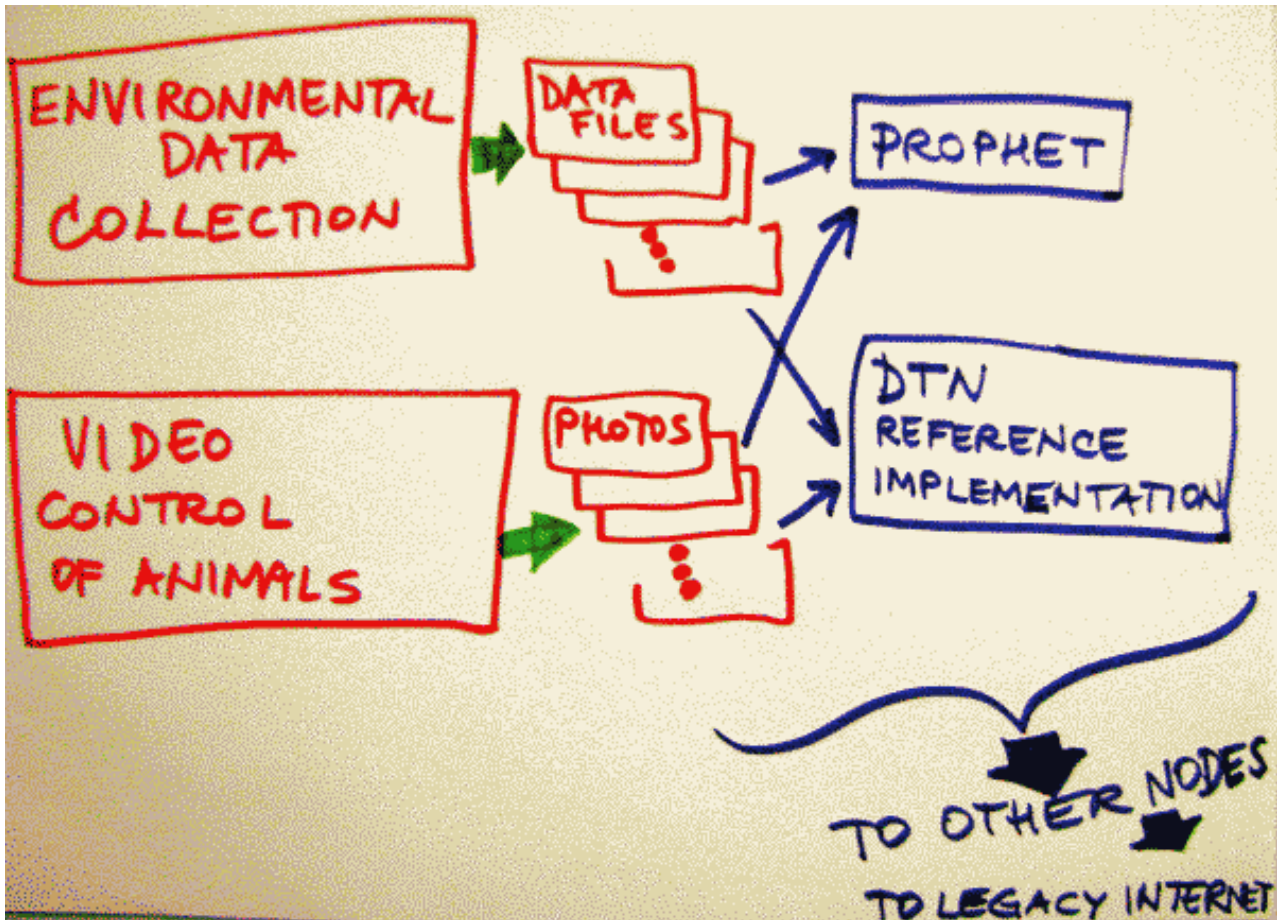


### Gateworks Cambria (Intel® XScale® IXP435 667MHz Processor, 128 Mb DRAM)

- Operating Temperature: **-40°C** to **+85°C**, Outdoor Enclosure
- Power consumption (**approx. 6W**), input voltage range (**8 to 48 VDC**), **PoE**
- Two v2.0 Host **USB** Ports (used for **RS232** to USB device, **WiFi** stick)
- Operating system: **Linux**-based firmware for embedded devices (**OpenWrt** or other similar or based on OpenWrt like: **DD-WRT**, **X-Wrt**, ...)
- OpenWrt supports large number of embedded devices (especially routers) based on different processors like: **XScale**, **ARM**, **x86**, ....

Which are the modules that interact with my research modules?  
- What are the main interfaces between my modules and the global system?

**MEIS:**      **DETAIL PICTURE FOR WINTER TEST FOR WP8:**



**Which are the modules that interact with my research modules?**

**- What are the main interfaces between my modules and the global system?**



## **PROBLEMS THAT HAVE TO BE SOLVED FOR NEXT TESTS (February 2009)**

*MEIS - (SLOVENE) TEST PERSPECTIVE as reported already in **M 8.1***

- **Crashing of DTN »reference implementation«**  
(Elwyn started some work, Alex..)
  - **File transfer** is needed also for the **Windows** platform  
(Tannak and MEIS, Avri & Samo)
- Problems with **toooooo much bundles** (DTN ref. Crashes, Prophet slow)
  - **Drivers for wireless** network adapters /  
NOT completely compatible, activating order is important
- **Prophet ↔ DTN ref. Communication** is unreliable
  - **HW for different** users & usage
- **HW:** low power consumption, down to **-20 deg.** Celsius,  
robust case, WINDOWS and Linux, .....



## SOLUTIONS AS SUGGESTED IN

### **M 8.1** – MILESTON REPORT FROM SUMMER TESTS

- **Cross platform applications are needed** – QT is solution for new applications
- **Bundles data base** upgrade in PROPHET
- Collection of **wireless network adapters** (that properly support AD-HOC mode)
- **File transfer in PROPHET**
- PROPHET **user interface → upgrade**
- **Trace route bundles** (source, route, destination info)
- **Time synchronisation**
- Work and SW needed for **analyses of test results**

😊 😊 **HELP IS WELCOME!!!** 😊 😊