MobileMAN Meeting Introduction

Cambridge, UK (23 March 2004)

Marco Conti

Computer Networks Dept., IIT CNR

Marco.conti@iit.cnr.it
http://cnd.iit.cnr.it/mobileMAN

Marratech E-Meeting Portal

- In the second part of the year we need a better coordination among the project partners
    - Better coordination about implementation and integration
    - Planning of experimental tetsbed
    - However, more meetings are not feasible

- Use of a video-conferencing tool: Marratech E-Meeting Portal
    - Free client for several platforms: Windows (95, NT 4.0, 98, ME, 2000 e XP), Mac OS X (da 10.2.6 in poi), Linux (≥ Redhat 7.1).

        http://www.marratech.com/download/

    - IIT-CNR has a Marratech E-Meeting Portal. Connect to:

        http://Gk.iit.cnr.it:8000

Marratech E-Meeting Portal

- The Marratech Work Environment gives users a secure e-meeting environment where members can talk with high quality audio, share information, pictures, MS Office documents and see each other.

- You only need a PC-camera and to download the client

- An experimental meeting can be set up during the first week of April

Intermediate Progress Report
II Year - First six months

- Construction of an Intermediate Progress Report to define the technical and management status of the project at month 18 (half of the second year)

- **CONTENTS LIST:**

1. WORK PROGRESS OVERVIEW
- this section contains for each partner the activities performed during the first 6 months (say, 300 - 500 words), e.g.,

  > CNR work in the first 6 months of II year has been on Deliverable D5 in the field of… The analysis performed by simulation and measurements has shown that ….

- Please also add the man months assigned to the activities to have a view of the efforts.

2. CONFERENCE MEETINGS:

MobileMAN project members attended the following conferences during the first six months of the project:

Input expected from each partner

3. COOPERATION WITH OTHER PROJECTS
Input expected from each partner (if any)

4. PUBLICATIONS:
Input expected from each partner

Next Meeting

- Will be in Helsinki (Finland) hosted by HUT
  - Tentative dates: second week of June (7-11)

- We will meet also the Industrial Advisory Board (IAB)

- Partecipation is Mandatory for the Representative of each project partner

- Planned period is Second week of June (depending also on IAB members availability)
  - Please let me know as soon as possible the constraints of each group

Meeting Technical Issues

Actions for Cambridge meeting as defined in Pisa's meeting

- For the next meeting we would like to present some implementations in order to realize a preliminary version for June 2004. All the contributions are related to the legacy architecture. It is not required for this date the evaluation of the cross-layer architecture. During this meeting each group has specified its objectives for this date:

    - HUT: prototype of SIP in addition to audio application on a group of PDA devices connected in ad hoc network.

    - IIT-CNR: implementation of Pastry model on ad hoc network, specifically based on routing protocols realized by HUT group, performance evaluation and application proposals.

    - NETikos: Emulation of Pastry to realize a distributed UDDI database on a legacy architecture. Not ensure the integration of Pastry and the studied application.

    - SUPS-DIE: results and measures obtained from the test of 802.11 card, compared with the previous experimental results published by IIT-CNR.

    - SUPSI-DLS: defining methods and tools for social analyses

    - Cambridge and Eurecom: definition of the type of relationship that can be established between middleware and cooperation.

II Year Success Criteria

The goals for evaluating the success of the second year of the project are:

- The software implementation of the solutions defined and studied during the first year, except the MobileMAN enhanced NIC.

- The integration of the developed solutions in a fully functioning testbed.

- Preliminary measures of the users' satisfaction of the ad hoc networking paradigm. These measures will be mainly done by *empirical research based on forms to be filled*. In addition, some measurements with a small group of users (on a simplified testbed) will be also performed.

- To investigate market-based mechanisms for exploiting the self-organised paradigm. This will take into account both the users' satisfaction and the advantages provided by the MobileMAN environment to some class of applications.

Deliverables status

Deliverables list							
Del. no.	Deliverable name	WP no.	Lead participant	Estimated person-months	Del. type*	Security **	Delivery (proj. month)

Already delivered

D7	Socio-economic research methodology	2	SUPSI-DLS	9	Report	Pub	18

To be delivered soon (March 2004)

Del. no.	Deliverable name	WP no.	Lead participant	Estimated person-months	Del. type*	Security **	Delivery (proj. month)
D8	MobileMAN first phase	4	CNR	25	Report	Pub.	22
D9	MobileMAN intermediate evaluation report	1	SUPSI-DIE	6	Report	Pub	24
D10	MobileMAN architecture, protocols, and services intermediate report	2	EURECOM	8	Report	Pub	24
D11	MobileMAN functionalities – enhanced set	3	HUT	40	Prototype	Pub	25

D8: Integration and Experimentation

- **D8 is an output of WP 4:** This WP will integrate the HW/SW developed (…) Qualitative study of the social and anthropological consequences of the utilization of the system.

- *T4 .1 Small Area Scale Integration:* Integrate part of the HW/SW developed (reduced networking and services capabilities), and install it in each node in a small and test this system in order to identify HW or simple networking problems and integration errors. Fix problems/errors found verifying that the system operates correctly. **(input to D8 - month 22 (July 2004) All**

- *T4 .2 Small Area Scale Validation and Analysis*: Validate the small scale MobileMAN from a technical (i.e., the technical constraints and limitations of the system), and social standpoint. The latter will be performed by measuring the acceptance -- from Virtual Communities (VCs) of users -- of the MobileMAN system when running some simple application(s). This will task will also monitor the social construction and human behaviour of the VCs. **(input to D8 - month 22), (D17 - month 34) All**

D11: MobileMAN functionalities – enhanced set

- **D11 (prototype) is an output of WP 3 and extends the implementation presented in D6**.

  - *T3.2 Implementation of Location Protocols*: Develop new location and discovery protocols based on the nearness metric. Implementation of it for the Linux operating system. **(input to D6, D11, D14)**

  - *T3.3 Routing and forwarding:* Develop routing and forwarding protocols for the self-organised and co-operative communications of MobileMAN. Implementation of them for the Linux operating system, in co-operation with the task on security (T3.4). **(input to D6, D11, D14)**

  - *T3.4 Security and Co-operation Model:* Implementation of the collaborative reputation mechanism (CORE) proposed to solve ad hoc node misbehaviour. Implementation of the CORE mechanism for the Linux operating system, in co-operation with the task dedicated to the definition and implementation of the routing algorithm adopted by MobileMAN (T3.3). **(input to D11, D14)**

  - *T3.5 P2P delivery mechanisms:* Implementation of the P2P mechanisms designed in Task T2.6. **(input to D11, D14)**

Milestones

M6 Month 16: Preliminary definition of the overall MobileMAN domain model to be used as input for WP 3 and WP 4. Meeting with the Industrial Advisory Board to present and discuss the MobileMAN domain model.

M8 – Month 16: Preliminary version of the basic set of MobileMAN functionalities. First Check on the status of the implementation of all MobileMAN components;

M10 – Month 20: Preliminary version of a small scale MobileMAN

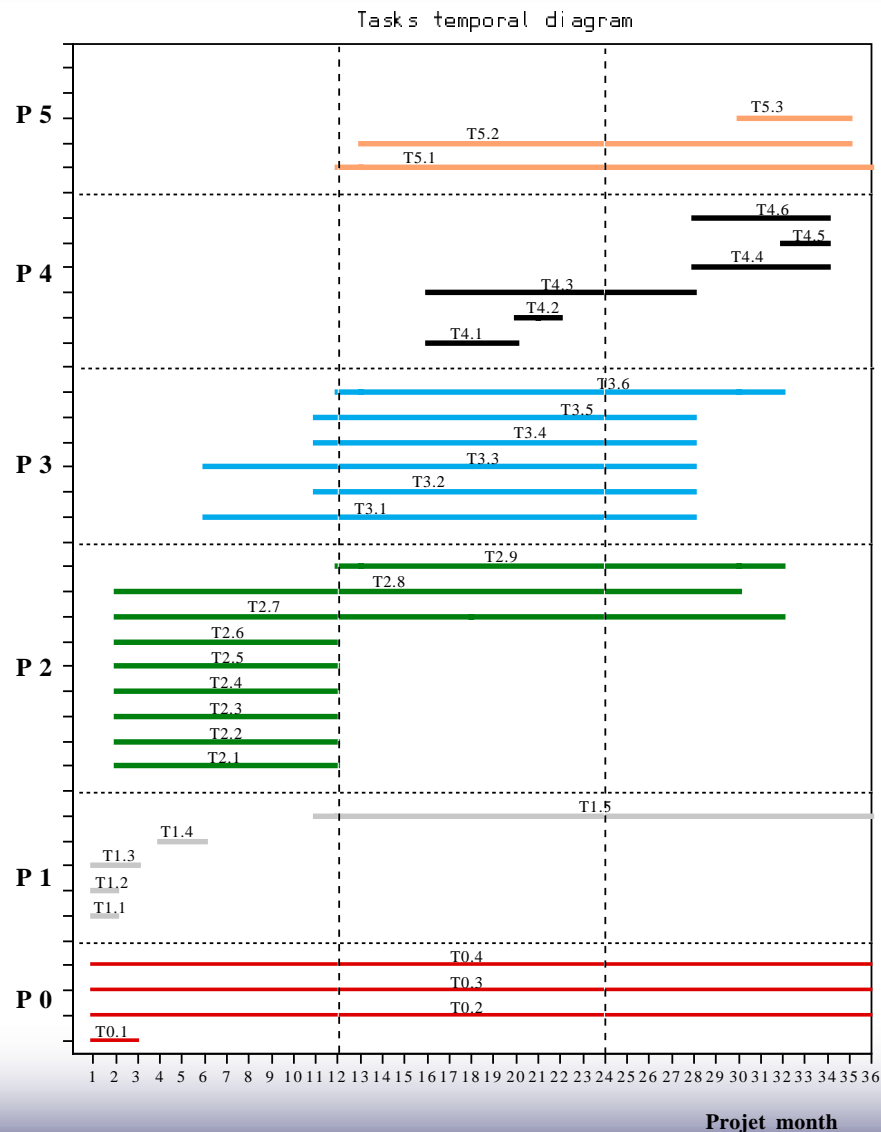M12 – Month 24: Analysis of the MobileMAN dissemination activities

Meeting Objectives

- To verify the status of the implementations

- To plan the experiments

- To define methods and tools for Interactions with users and plan tests with users

II Year WPs and Tasks

Tasks temporal diagram

The main activities are in the framework of WP3 and WP 4:

IMPLEMENTATION AND INTEGRATION AND SOCIAL STUDY

WP 3 Objectives: to implement the MobileMAN innovative components at networking and service layer of the architecture as defined by WP2.

WP 4 Objectives: This WP will integrate the HW/SW developed (…) Qualitative study of the social and anthropological consequences of the utilization of the system.

T2.7 *Socio-economic modelling:*

T2.8 *Economic driven modelling:*

T2.9 *Domain model refinement and risk reduction:*

T5.1 *Dissemination:*

T5.2 *Exploitation Plan Definition:*

WP 3

Objectives: The aim of this WP is to implement the MobileMAN innovative components at networking and service layer of the architecture as defined by WP2.

Description of work: The innovative elements of the networking architecture of MobileMAN consist of the MAC, Routing and Location components. At service level the main components is the security one. The work to be done regarding these components includes all the phases of the HW/SW development lifecycle, from requirements analysis to testing (verification testing).

T3.1 Bursty-responsive MAC Develop new MAC protocol and hardware supporting bursty communication. The hardware will be based, wherever possible, on a off-the-shelf 802.11 chipset whit ad-hoc programmed firmware. **(input to D12) - SUPSI DIE**

T3.2 Implementation of Location Protocols: Develop new location and discovery protocols based on the nearness metric. Implementation of it for the Linux operating system. **(input to D6, D11, D14) - CNR & HUT**

WP 3 (cont.)

T3.3 Routing and forwarding: Develop routing and forwarding protocols for the self-organised and co-operative communications of MobileMAN. Implementation of them for the Linux operating system, in co-operation with the task on security (T3.4). **(input to D6, D11, D14) HUT & CNR**

T3.4 Security and Co-operation Model: Implementation of the collaborative reputation mechanism (CORE) proposed to solve ad hoc node misbehaviour. Implementation of the CORE mechanism for the Linux operating system, in co-operation with the task dedicated to the definition and implementation of the routing algorithm adopted by MobileMAN (T3.3). **(input to D11, D14) Eurecom**

T3.5 P2P delivery mechanisms: Implementation of the P2P mechanisms designed in Task T2.6. **(input to D11, D14) Cambridge**

WP 4

Description of work: Given the high challenges of this WP, the main tasks to be performed in it (integration and acceptance) will be addressed at two different area scales: campus-wide area scale (T4 .2 and T4 .3) and large area scale (T4 .4 and T4 .5).

T4 .1 Small Area Scale Integration: Integrate part of the HW/SW developed (reduced networking and services capabilities), and install it in each node in a small and test this system in order to identify HW or simple networking problems and integration errors. Fix problems/errors found verifying that the system operates correctly. **(input to D8 - month 22) All**

T4 .2 Small Area Scale Validation and Analysis: Validate the small scale MobileMAN from a technical (i.e., the technical constraints and limitations of the system), and social standpoint. The latter will be performed by measuring the acceptance -- from Virtual Communities (VCs) of users -- of the MobileMAN system when running some simple application(s). This will task will also monitor the social construction and human behaviour of the VCs. **(input to D8 - month 22), (D17 - month 34) All**

T4.3 Evaluation of MobileMAN Networking: Simulative study of the integration of MobileMAN Networking components with other relevant elements as the connection to Internet, as well as congestion control and error recovery mechanisms to optimise the utilization of the resources. **(input to D16 - month 34) HUT, CNR, Eurecom**

II Year Activities

- The objectives reported below are the detailed criteria for evaluating the success of the second year of the project.

MobileMAN architecture implementation **(CNR)**

- Implementation and validation of the MobileMAN architecture as defined during the first year (see D5) considering both the original and the new reference model.

New applications and services **(Netikos)**

- Adaptation of existing applications (or classes of applications) identified, during the first year, as ones that can become a customer advantage, when run on top of MobileMAN, compared to traditional technologies.

Middleware **(Cambridge)**

- Adaptation of Pastry middleware for the MobileMAN environment to exploit cross layering.

- Development of new solutions for P2P information delivery based on Pastry.

Co-operation Model **(Eurecom)**

- Implementation and validation of the cooperation models and mechanisms defined during the first year.

II Year Activities (cont.)

Networking services **(CNR, HUT)**

- Include the cross-layering view at network/transport layer

- Design of packet forwarding schemes suitable for MobileMAN.

- Implementation and validation of location scheme defined during the first year.

- Development and testing of a complete ad hoc network

Wireless Technologies **(SUPSI - DIE)**

- Include the cross-layering view at datalink layer.

- Design and implement a full datalink layer that includes the enhanced MAC protocol for ad hoc networks as designed during the first year.

Socio-economic Model **(SUPSI - DLS)**

- Apply the developed methodology for evaluating social, anthropological, and economic potential of MobileMAN, and provide the results for improving the technical parts.