COPRAS – Kick-Off Meeting 14th October 2004

CAPANINA Project Perspective

'Communications from Aerial Platform Networks delivering Broadband for All'

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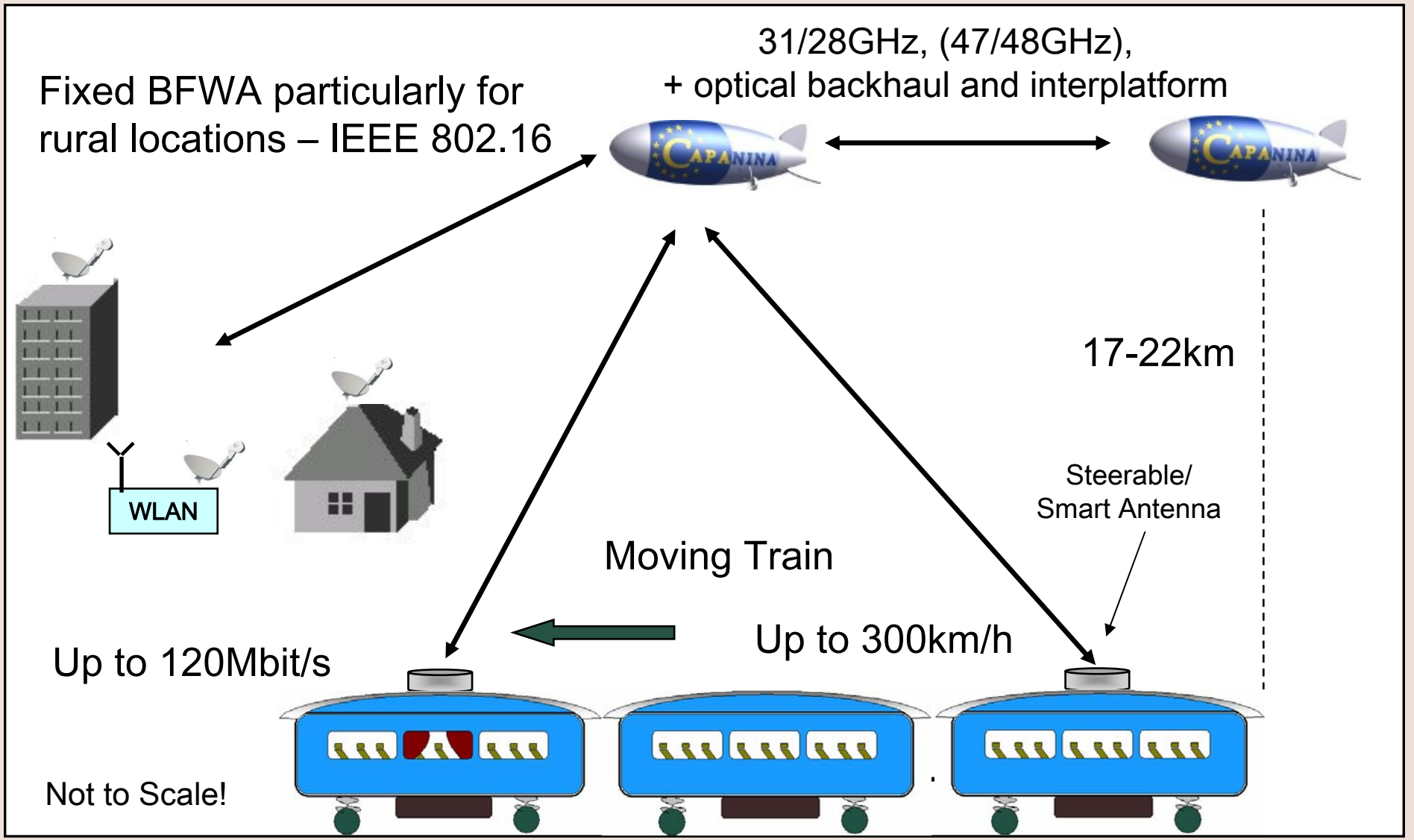
The CAPANINA Consortium

- University of York (UK)
  - York Electronics Centre
  - Department of Electronics
- Jozef Stefan Institute (SL)
- Politecnico di Torino (I)
- Universitat Politecnica de Catalunya (ES)
- Carlo Gavazzi Space (I)
- Budapest University of Technology & Economics (HU)
- DLR (D)
- BTexact (UK)
- SkyLINC Ltd (UK)
- EuroConcepts Srl (I)
- CSEM (CH)
- Contraves AG (CH)

- Builds on 'HeliNet' Expertise
- €5.6M total, €3.1M EU Contribution
- 64 people involved
- Balanced research, development and exploitation activities
- 1 Overseas collaborator

National Institute of Information and Communications Technology of Japan

The CAPANINA Scenario



The CAPANINA Scenario (ii)

Possible standards:
IEEE 802.16
IEEE 802.11a
HIPERLAN/2
DVB-S, DVB-RCS
DVB-T

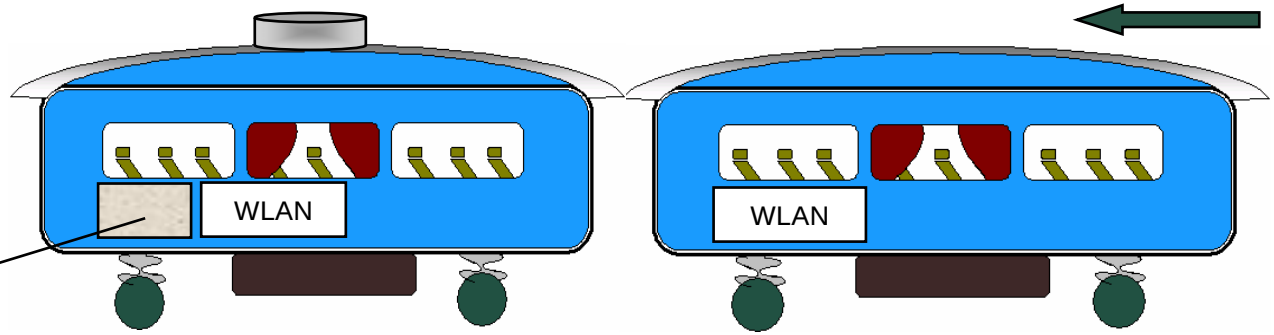
Up to 120Mbit/s
(aggregate)

Possible Services:
High speed Internet
Video-on-demand
Corporate Services

Phased Array,
Smart Antenna

300km/h

Down conversion,
signal processing,
general processing,
on board caching,
distribution to
carriage WLANs



Key Issues

- Applications/Business Models
  - Markets, Outline system architecture
- Communications Links & Networking
  - Standards for mobile scenario, mm-wave propagation, RRM, System capacity
- Communications Nodes
  - Equipment for trials, Steerable antenna development – vehicles & HAP, Optical comms equipment
- Testbed (FWA, Applications, Opt comms, Propagation)
  - Yr 1: UK Trial - 300m tethered aerostat
  - Yr 2: Sweden Trial - Stratospheric balloon test
  - Yr 3 : 'Japanese' Trial

Regulations & Possible Broadband Mobile Standards?

- ITU-R WP 9B on HAP Communications
  - Spectrum Sharing – European HAP Model
- IEEE802.16 (family)
  - Delivers capacity requirements up/down
  - No mobility in basic standard
  - Mobility extensions in IEEE802.16e
- IEEE802.20
  - Delivers mobility but not data rate
  - Will it ever emerge as a suitable standard
- ETSI BRAN (HIPERACCESS/HIPERMAN)
  - MAC layer incompatibility with 802.16
  - Will they have world wide use?
- DVB-S/DVB-S2 DVB-RCS DVB-H DVB-T
  - Data rate on downlink meets requirement
  - Widely established
  - Let down by return link data rate
  - Mobility may be solved with DVB-H

Finally in Summary

- No one standard is suitable
- What can COPRAS Offer?
  - A Standards Framework / Timetable
  - Contacts?
- Contacts
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