ADAMAS (IST-1999-10731)

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   None

Purpose:

   Inform the IEEE802.16 Working Group about the ADAMAS IST-1999-10731 Project

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ADAptive Multicarrier Access System
ADAMAS IST-1999-10731

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ADAMAS Background

- **ADAMAS is**
  - ➤ **an EC KA 4 project in terms of 5th IST Framework**
  - ➤ 50% of the budget is funded by EC
  - ➤ Submitted in June 1999
  - ➤ Approved in Aug. 1999
  - ➤ **Started in April 2000**

- **Duration 3 years**

ADAMAS : Consortium members

- Companies
  - ➢ INTRACOM S.A. (Principal Contractor)
  - ➢ RUNCOM Ltd.
  - ➢ LUCENT TECHNOLOGIES
  - ➢ CRL
  - ➢ OTE
- Academic Institutes
  - ➢ NCUA
  - ➢ ETH Zurich

# Drivers for the ADAMAS

- Broadband fixed Wireless Access Systems
- Liberalisation and competition
  - new entrants
    - need for lower installation and operation costs
    - need for rapid return on investment
  - Incumbents
    - Need to deliver new types of services
- Efficient utilisation of frequencies
  - Lack of bandwidth
- Need for cost reduction of the system
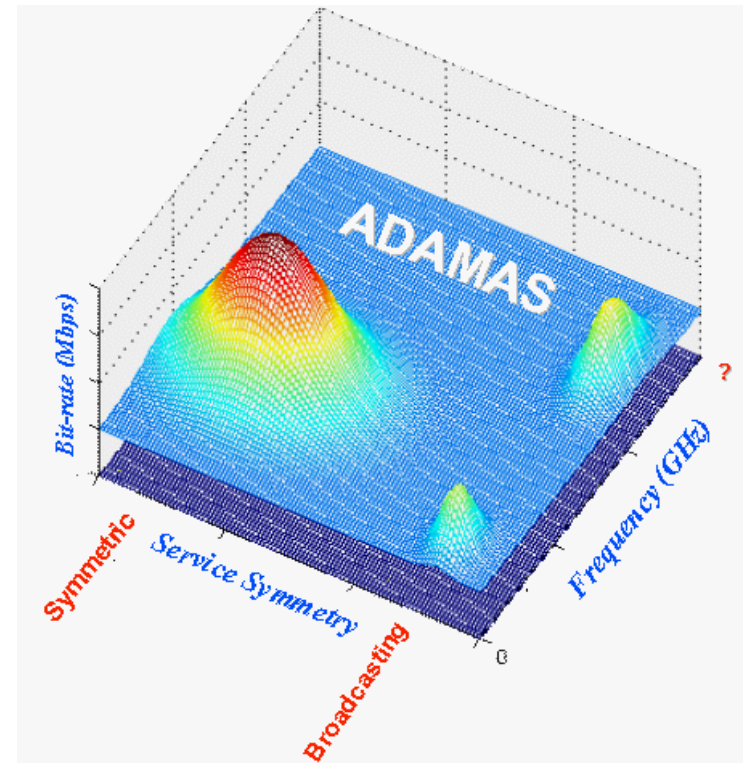 - Cost per line reduction

ADAMAS Objectives

- Adaptive OFDM P-MP outdoor broadband fixed wireless access system will be implemented (Prototype)
- PHY and DLC layer adaptivity
  - 64 Kbps - 34 Mbps
- Two modes of operation will be tackled
  - Unlicensed (5.8 GHz)
  - Licensed (10.5 GHz)
- DTDMA/TDD
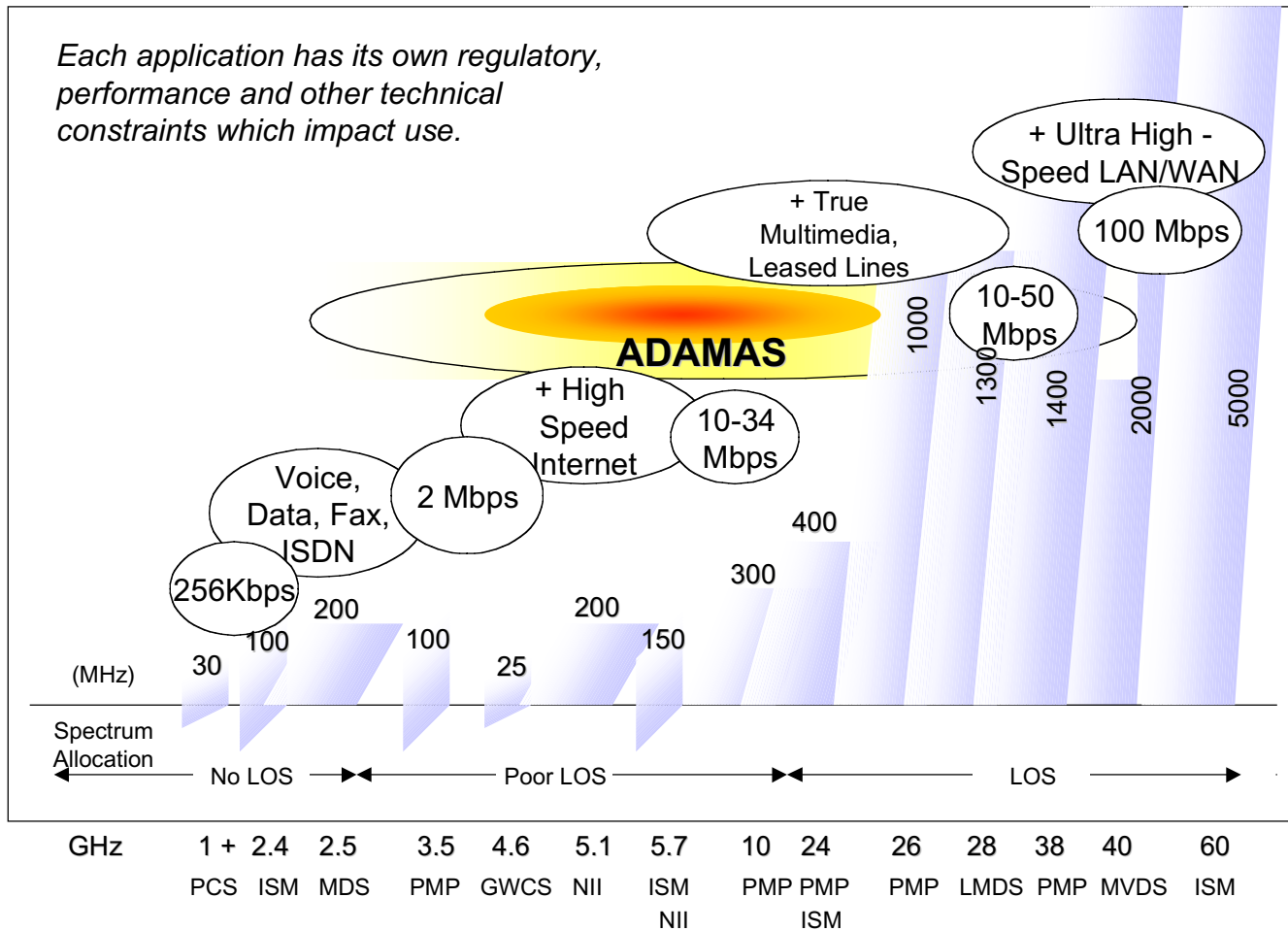- The range of frequencies (2-40 GHz) where OFDM has advantages

ADAMAS Target
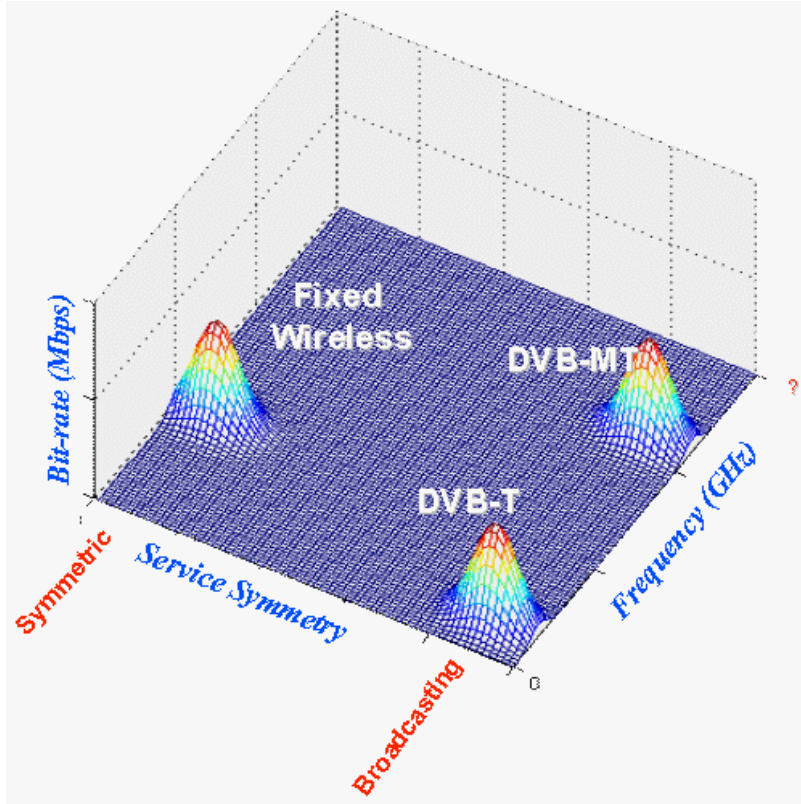
Current status

ADAMAS target

ADAMAS Positioning

Each application has its own regulatory, performance and other technical constraints which impact use.

+ Ultra High - Speed LAN/WAN

100 Mbps

+ True Multimedia, Leased Lines

1000

10-50 Mbps

ADAMAS

1300 1400 2000 5000

+ High Speed Internet

10-34 Mbps

Voice, Data, Fax, ISDN

2 Mbps

400

256Kbps

200 300

100 100 200

25 150

(MHz)

30

Spectrum Allocation

No LOS Poor LOS LOS

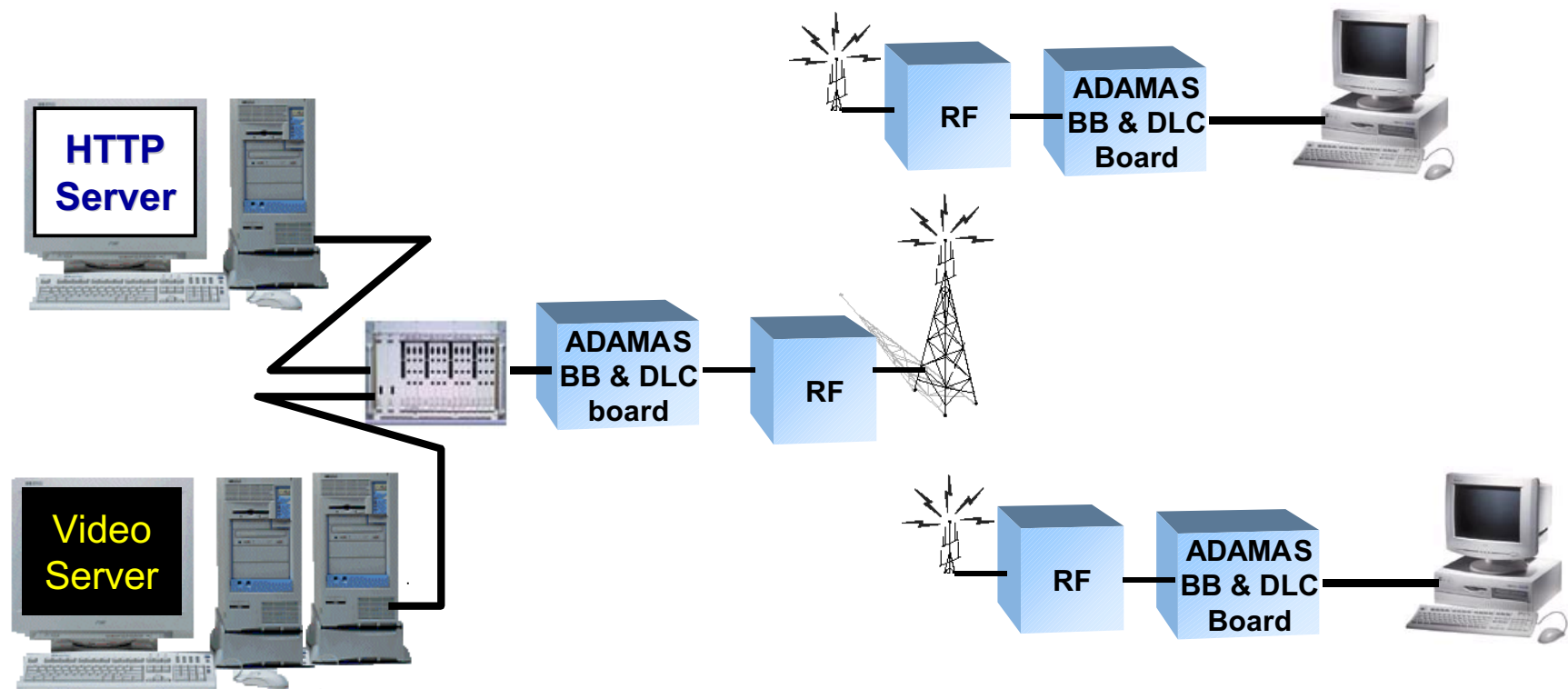| GHz	1 +	2.4	2.5	3.5	4.6	5.1	5.7	10	24	26	28	38	40	60
	PCS	ISM	MDS	PMP	GWCS	NII	ISM NII	PMP	PMP ISM	PMP	LMDS	PMP	MVDS	ISM

SOURCE BOSCH Telecom, Inc 1999

ADAMAS System - Demo configuration

Conclusions

- ADAMAS targets to a Prototype of a Fixed Broadband Wireless Access System
  - ➢ Unlicensed band (5.8 GHz)
  - ➢ Lincensed Band (10.5 GHz)
- ADAMAS Features
  - ➢ OFDM
  - ➢ DTDMA / TDD
  - ➢ Adaptive Modulation