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Mathematics & Computing Technology

5.15 GHz Update

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Agenda

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- Situation-Target-Proposal

- Common PMD

- IEEE 802.11a Implications

- Hiperlan 2 Implications

- Software Radios

- LMDS/MMDS

- Conclusions

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STP for Worldwide 5.15GHz

Situation - The FCC allocated 300MHz of bandwidth in January of 1997 for unlicensed use called the "National Information Infrastructure." These frequencies became known as the NII frequencies, starting at 5.15GHz. The first 100MHz of frequency has also been allocated in Europe as the Hiperlan frequencies and the European Telecommunications Standards Institute (ETSI) has asked for an additional 150MHz to go with the original 100MHz. Japan has also set aside some of the 5.15GHz as an unlicensed band in Japan. These frequencies form the basis for the next worldwide unlicensed frequency allocation. The 2.4GHz ISM band in the US is actually a worldwide frequency which was allocated by the World Radio Conference (WRC) in 1990. The next WRC (2000 or 2002) is the time for Boeing and IEEE 802 to recommend that 5.15GHz be the next worldwide frequency band.

Target - A recommendation from Boeing that 5.15GHz band be allocated in the WRC2002 as a worldwide unlicensed frequency band.

Proposal - IEEE and Boeing should submit an official recommendation to support and actually deploy the 5.15GHz band to the WRC as a worldwide unlicensed frequency.

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Common PMD

- Common PMD between 5.15GHz HiperIan2 and 802.11a

- Not a common MAC

- Regulatory rules in Europe are not competitive

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Political Realities

- ETSI BRAN did not receive the 802.11 proposal well

- Regulatory – Hiperlan2 only in Europe at 5.15GHz

- Therefore, even software radio concepts not viable due to regulatory issues in Europe.

- Japan receptive

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Boeing Requirements

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- Factory

- Airport

- Airplane in flight

- Passengers onboard airplane

- Transition between regulatory domains

- Aircraft communications services

- Telecommunications handoff scenarios

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Boeing Intentions

- Participate in the US SG8A/9B

- Participate in the ITU-R SG8A/9B

- Help draft an IEEE 802.11 contribution to the ITU SG8A/9B

- Work with FCC and NTIA on formulating a US position

- Work with CITEL to work an NA/SA position

Companies in Support (so far)

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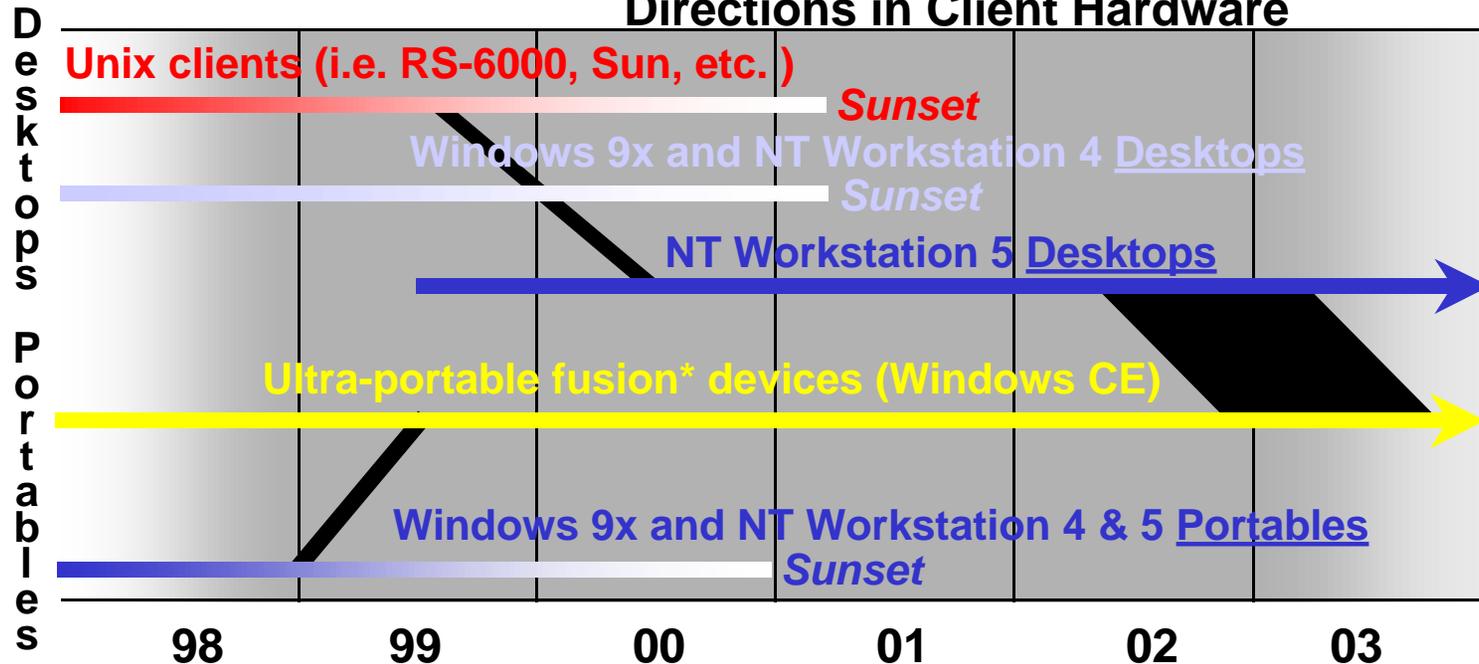**Mathematics & Computing Technology**

- Boeing

- Microsoft

- Motorola

Emerging Technologies Railroad Charts

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Chart 4: Client Platforms
Directions in Client Hardware

D **Unix clients (i.e. RS-6000, Sun, etc.)**
e *Sunset*
s
k **Windows 9x and NT Workstation 4 Desktops**
t *Sunset*
o
p **NT Workstation 5 Desktops**
s

P
o **Ultra-portable fusion* devices (Windows CE)**
r
t
a
b **Windows 9x and NT Workstation 4 & 5 Portables**
l *Sunset*
e
s

98   **99**   **00**   **01**   **02**   **03**

* Fusion devices combine elements of portable computers, personal digital assistants (PDAs), 2 way pagers, and cellular phones. There will be thin clients that bring elements of fusion hardware technology to at least some desktops.

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Conclusions

- 5.15GHz needs to be worked as a worldwide unlicensed frequency

- IEEE position paper on 5.15GHz

- Regulatory Approach Recommendations
    Meet with US SG8A/9B
    Meet with ITU SG8A/9B