

International Standards for Long Range Wireless Networks

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International Standards for Long Range Wireless Networks

Background

- JTC1/SC6 Document 6N15085 presents views regarding “the MAC Security Requirements for Long Range Wireless Networks (LRWN)”
- IEEE has earlier provided views on this topic in 6N14789.

Understanding of “LRWN”

- According to the description of LRWN provided in 6N15085, typical characteristics of LRWN include
 - “large coverage range over 1km
 - high data rate
 - amount users
 - simultaneous multi-connections
 - differentiated services
 - etc.”

International Standards for LRWN

International standards exist specifying networks that meet the description of LRWN as provided in 6N15085, notably:

- ITU Recommendation ITU-R M.1457
 - Detailed specifications of the terrestrial radio interfaces of International Mobile Telecommunications-2000
 - *IMT-2000*
- ITU Recommendation ITU-R M.2012
 - Detailed specifications of the terrestrial radio interfaces of International Mobile Telecommunications-Advanced
 - *IMT-Advanced*

IMT-2000

Six radio interfaces:

Radio Interface	Common Name	Recognized Developers/Stakeholders
CDMA Direct Spread	W-CDMA	3GPP, ATIB, ATIS, CCSA, ETSI, TTA, TTC
CDMA Multi-Carrier	CDMA2000	3GPP2, TTA
CDMA TDD	TD-CDMA & TD-SCDMA	3GPP, ATIB, ATIS, CCSA, ETSI, TTA, TTC
TDMA Single-Carrier	EDGE	ETSI
FDMA/TDMA	DECT	ETSI
OFDMA TDD WMAN	WiMAX	IEEE, WiMAX Forum

IMT-2000 Update Process

- ITU Rec. ITU-R M.1457 completed in 1999
- Typically revised on annual basis
- Revision 11 under development
 - completion expected in September 2012
- Revision 12 can be anticipated for 2013

IMT-Advanced

Two radio interfaces:

Radio Interface	Common Name	Recognized Developers/Stakeholders
LTE-Advanced	LTE-Advanced	3GPP, ARIB, ATIS, CCSA, ETSI, TTA, TTC
WirelessMAN-Advanced	WiMAX 2	IEEE, ARIB, TTA, WiMAX Forum

IMT-Advanced Update Process

- ITU Rec. ITU-R M.2012 approved in 2012
- Scheduled for revision on annual basis within ITU-R Working Party 5D
- Revision 1 development is underway
 - First inputs due July 2012
 - Completion expected in October 2013

LRWN Security

- Security is a vital issue in Long-Range Wireless Networks
- IMT-2000 and IMT-Advanced standards specify security protocols
 - thoroughly vetted by standards developers, international evaluation bodies, ITU-R, product developers, and telecommunications operators
- Proposals in 6N15085 not currently incorporated in IMT-2000 or IMT-Advanced

Revision of LRWN Security

- IMT-2000 and IMT-Advanced are the internationally-recognized standards for LRWN
- IMT-2000 and IMT-Advanced are revised on an annual basis in ITU-R Working Party 5D
- Any suggestions for updates to LRWN Security should be brought to the attention of ITU-R Working Party 5D for consideration during the revision process
 - The SDOs developing the IMT Radio Interfaces should be notified as well.

Recommended SC6 Actions

- Any SC6 concerns regarding aspects of internationally-adopted Long Range Wireless Networks should be addressed by liaison statement to ITU-R Working Party 5D.
- A formal copy of the liaison to ITU should be addressed to all the responsible bodies developing IMT-2000 and IMT-Advanced radio interfaces:
 - 3GPP & 3GPP2
 - ARIB (Association of Radio Industries and Businesses, Japan)
 - ATIS (USA)
 - CCSA (China Communications Standards Association)
 - ETSI (European Telecommunications Standards Institute)
 - TIA (Telecommunications Industry Association, USA)
 - TTA (Telecommunications Technology Association, Korea)
 - TTC (Telecommunication Technology Committee, Japan)
 - IEEE 802.16 Working Group
 - WiMAX Forum
- Any SC6 comments regarding new discoveries of flaws in EAP or RSA should be brought to the immediate attention of the IETF Security Directorate and to the above bodies.