

# Fixed-Mobile Convergence Alliance

## Handover Requirements

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### Authors:

Name	Company	Address	Phone	email
Rodrigo Donazzolo	FMCA			Rodrigo.Donazzolo@thefmca.com
Paul Fidler	FMCA			Paul.Fidler@bt.com

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# Abstract

**This presentation introduces:**

- **The aims and objectives of the Fixed-Mobile Convergence Alliance (FMCA) Product Requirement Definitions for Wi-Fi SIP, Wi-Fi GAN (UMA) and Bluetooth CTP.**
- **The FMCA Product Requirements for Wi-Fi / Cellular Handover.**

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# FMCA Overview

- 24 Members representing 500 million customers
- Driving productisation of the Convergence Technologies
- Successfully driven tier 1 Wi-Fi handset availability (20 by end 2006)



## The Role of the FMCA

- **FMCA Members represent 1 in 5 of world's telecom subscribers**
- **Membership reflects where Convergence opportunities are the greatest**
  - 23 members are consolidated fixed & mobile operators
  - ‘The FMCA continues to both drive and ride the current wave of interest in convergence’ (*Ovum 9/05*)
- **Accelerating Members into the Convergence market**
  - sharing technical trial & selection information
  - reduces R&D time & costs
- ‘Propel Convergence from niche to mainstream’

## **FMCA - Productising Convergence**

- Issued v1.0 of CTP, GAN (UMA), & SIP Product Requirement Definitions (PRD's)
- PRD's reflect Convergence requirements across entire FMCA Membership base
- Aligning with Wi-Fi Alliance, ETSI, 3GPP's Standards & Certification programmes, etc.
- Ensuring global interoperability of the technology and architectural components that underpin key Convergence products and services.
- 100+ executives inputting on FMCA Workstream activities
- Work closely with Tiers 1 & 2 Handset Vendors.
- BT Fusion launched on the 15<sup>th</sup> of June 2005.
- KT's Onephone, first adverts in May 05 - already hit 100,000 subscribers

## The FMCA Aims & Objectives – SDOs/Fora

- Productise the Convergence Technologies (**Bluetooth CTP, Wi-Fi GAN (UMA) & Wi-Fi SIP**).
- Ensure global interoperability of the technology and architectural components that underpin Convergence products and services.
- **Comply with existing technical standards (e.g. 3GPP, ETSI, IEEE) and certifications (Wi-Fi Alliance).**
- The FMCA has no intention of developing new technical standards
- **Raise potential common technical issues with SDOs/Fora, for consideration, through their existing work-flow procedures.**
- Encourage consistency across product and equipment standards.

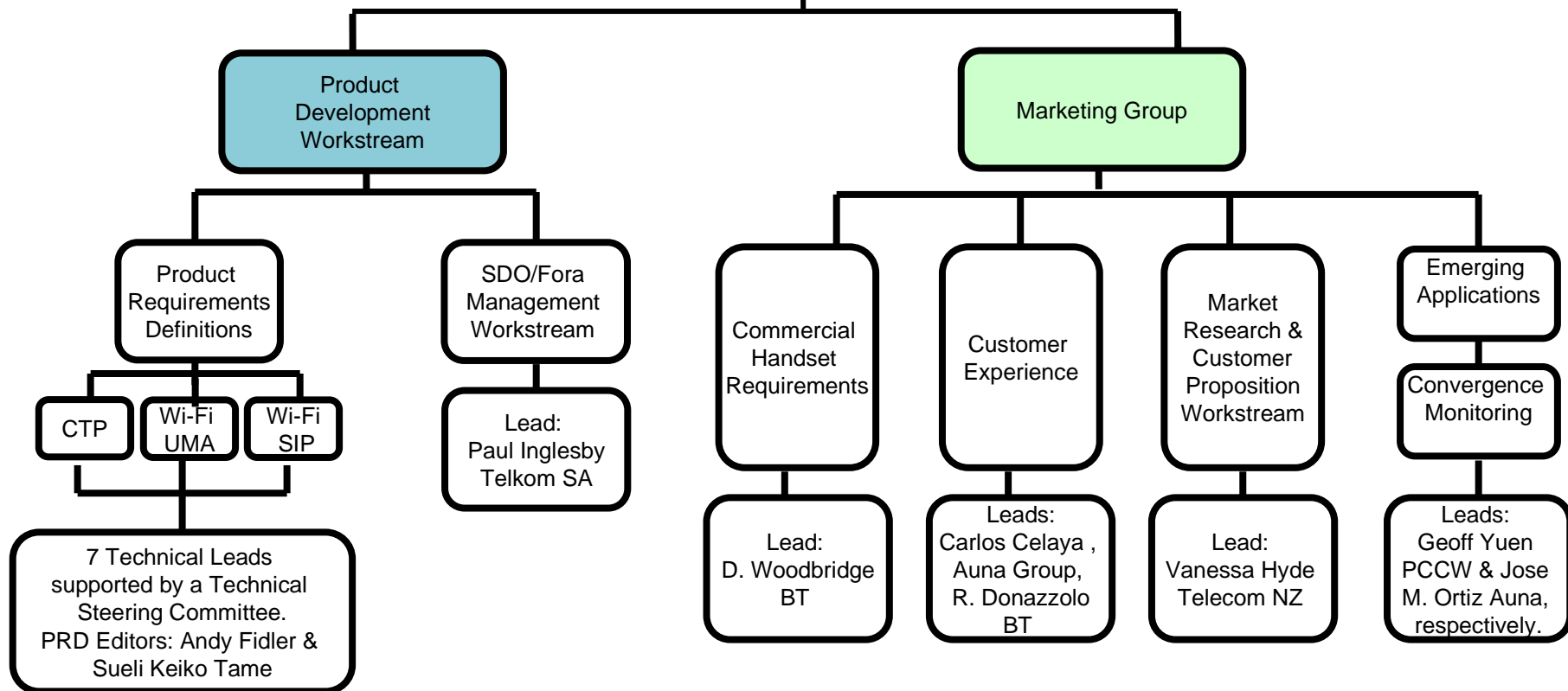
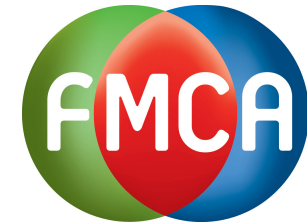
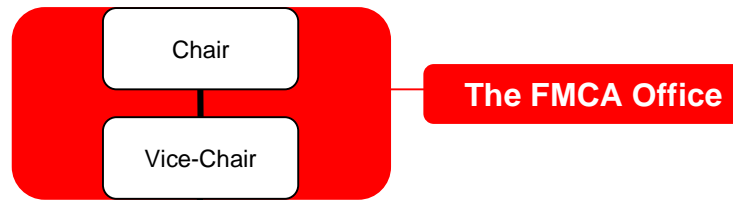
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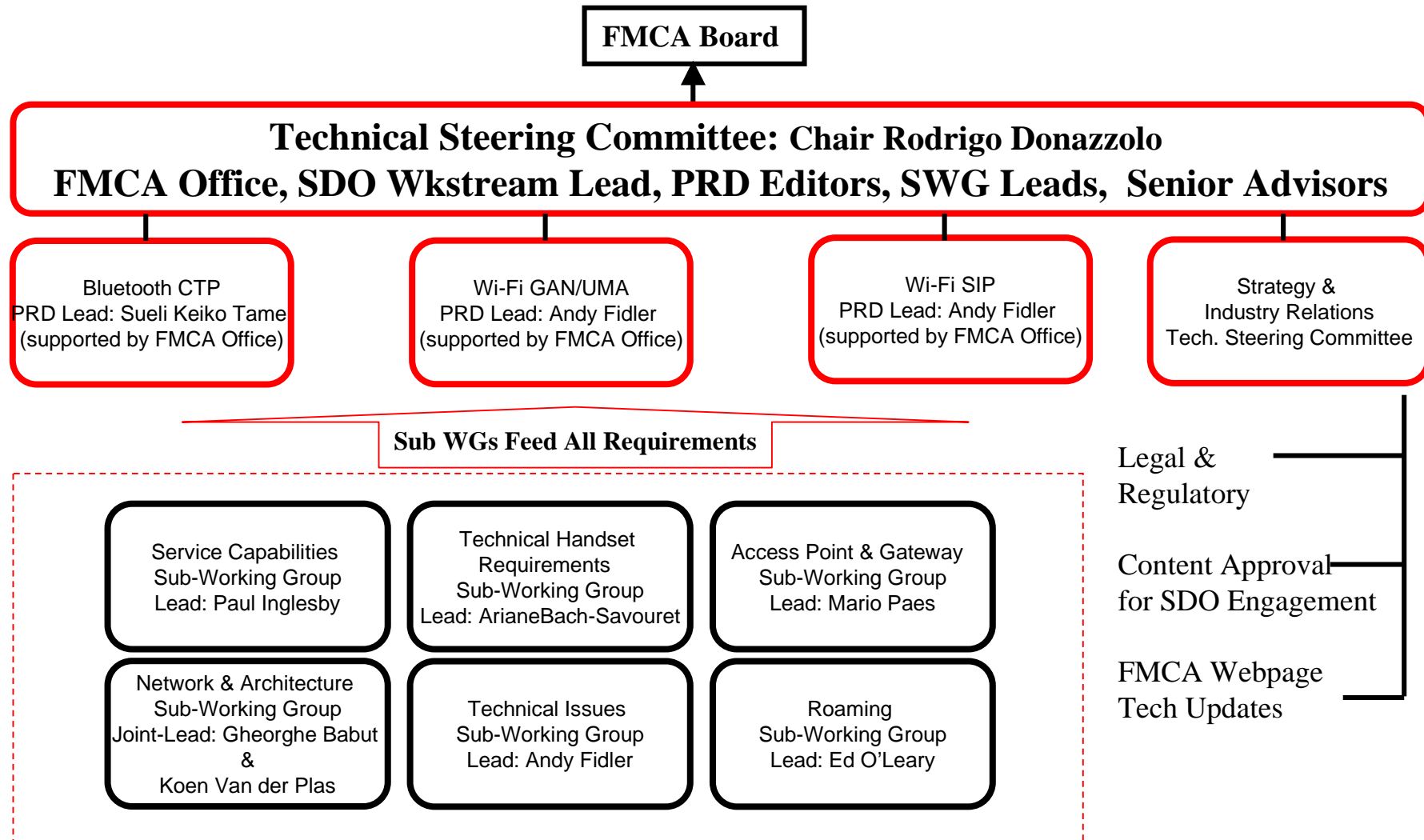
## The FMCA Product Requirement Definitions (PRDs)

- The FMCA PRDs are detailed technical papers centred on the key Convergence Technologies (Bluetooth CTP, Wi-Fi GAN (UMA) and Wi-Fi SIP).
- Release 1 of the FMCA PRDs were published on 31<sup>st</sup> August 2005 and are available from [www.thefmca.com](http://www.thefmca.com)
- The FMCA focus is on the phased evolution of its Product Requirement Definitions, with Release 2 scheduled for March 2006.
- The FMCA has engaged with leading Standards Development and Certification Organisations, such as the Wi-Fi Alliance, 3GPP and ETSI-TISPAN.
- As indicated, the FMCA is not a Standards Development Organisation. Its focus is on the productisation of Convergence technologies.

# FMCA Governance Structure



# FMCA Product Requirement Definitions Workstream: Governance Structure



# **FMCA PRD Structure**

- **Service Requirements**
- **Mobile Station Requirements**
- **Access Point Requirements**
- **Network Requirements**

## Reasons for engaging IEEE & Next Steps

- **To raise the IEEE awareness of the FMCA Product Requirement Definitions for the key Convergence technologies.**
- **To comply with existing and future IEEE standards.**
  - In particular alignment of FMCA handover and wireless/cellular interoperability requirements with IEEE 802.21 and IEEE 802.11u activities.
- **To raise in a timely manner outstanding technical issues identified by the FMCA Membership base for consideration by the appropriate IEEE Working Groups.**
- **To develop a working relationship with IEEE.**

## **IEEE 802.21 / FMCA Discussion Points**

- **How the FMCA Handover and Voice Call Continuity product requirements can be met through emerging IEEE 802.21 activities?**
- **Key discussion points**
  - Voice Call Continuity requirements
  - Security & authorisation aspects
  - Quality of Service, Load Balancing & Admission Control aspects
  - Criteria for handover
    - Key parameters to use in decision process, e.g. RSSI, packet error rate, available network resource
    - Balance between user experience & signalling load

# FMCA Product Requirements for Handover (Wi-Fi SIP) (1)

- The MS shall support voice call handover between cellular and wireless networks, where the wireless network could be an enterprise, private home or public hotspot network.
- The user experience of the handover between wireless and cellular should be seamless with no loss of voice (call continuity) and, where possible, a maximum voice break of no more than 300ms.
- When the MS switches between cellular and wireless networks, a data session should not be dropped and any application that is running shall not be affected from a user's perspective. However, it is appreciated that the user may become aware of speed changes and pauses.
- For handover of a call from cellular to wireless, the MS shall be capable of signalling to the core VoIP network using wireless while the cellular call is ongoing - if this is required to support handover.
- For handover of a call from wireless to cellular, the MS shall be capable of signalling to the core VoIP network using cellular while the wireless call is ongoing - if this is required to support handover.
- The MS should support the capability to perform a cellular location update to the cellular network upon handover, if required.

## FMCA Product Requirements for Handover (Wi-Fi SIP) (2)

- The MS shall be capable of initiating a switch to cellular mode based on measurement of downlink wireless signal strength. Measurement of wireless signal strength alone is not sufficient: the MS should also take bit error rate and other relevant factors into account.
- The MS shall use a hysteresis mechanism at the Wi-Fi level to prevent multiple mode changes at the boundary of Wi-Fi coverage.
- The MS shall support hand-in and hand-out timers to limit the number of consecutive network changes (e.g. ‘ping-pong’ effect) and hence reduce network signalling.
- The MS shall send a presence update immediately after all rove-in/out and handin/out mode changes to allow intelligent routing. This update should also be used to ensure that the presence and IM servers are updated on the current MS network location.



## **Key Contacts:**

**Rodrigo Donazzolo**

**FMCA Programme Director**

**Tel. +44 771 365 1661**

**Email [rodrigo.donazzolo@thefmca.com](mailto:rodrigo.donazzolo@thefmca.com)**

**For further information:**

- Refer to [www.thefmca.com](http://www.thefmca.com)

**Thank You**