MBWA Considerations
-Towards a single PAR

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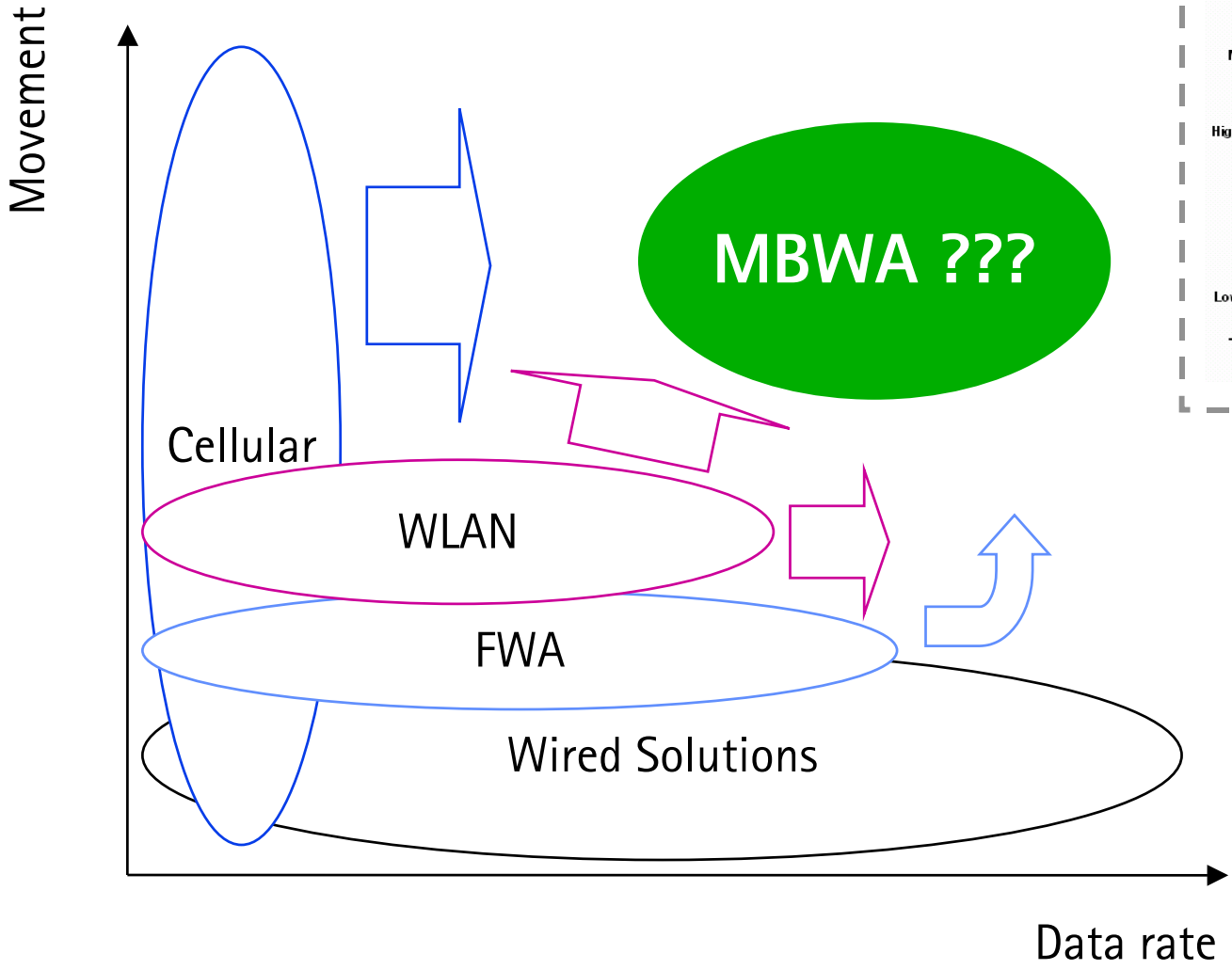
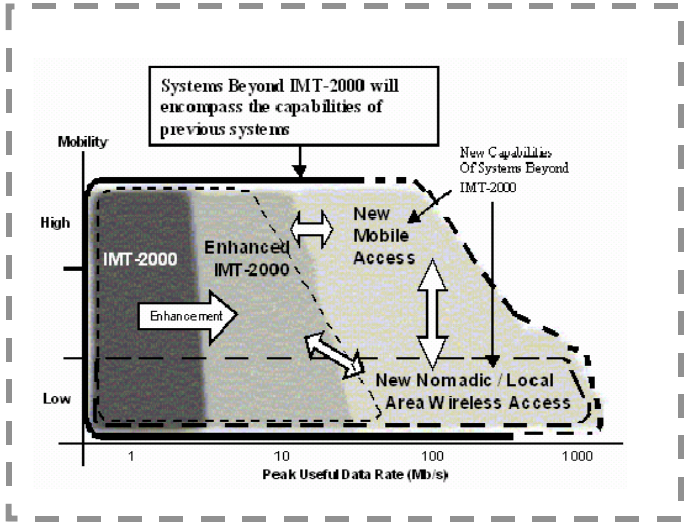
Market Considerations

- End customers are ready to pay for:
  1. Infotainment
  2. Mobility
  3. Anything else is add-on for free!
- Infotainment benefits greatly from multimegabit user data rates => crucial requirement!
- Mobility means ubiquitous communications experience => requires technology to support various speeds but also coverage
- A well spread and adopted standard is the best revenue generating tool allowing real competition on various levels

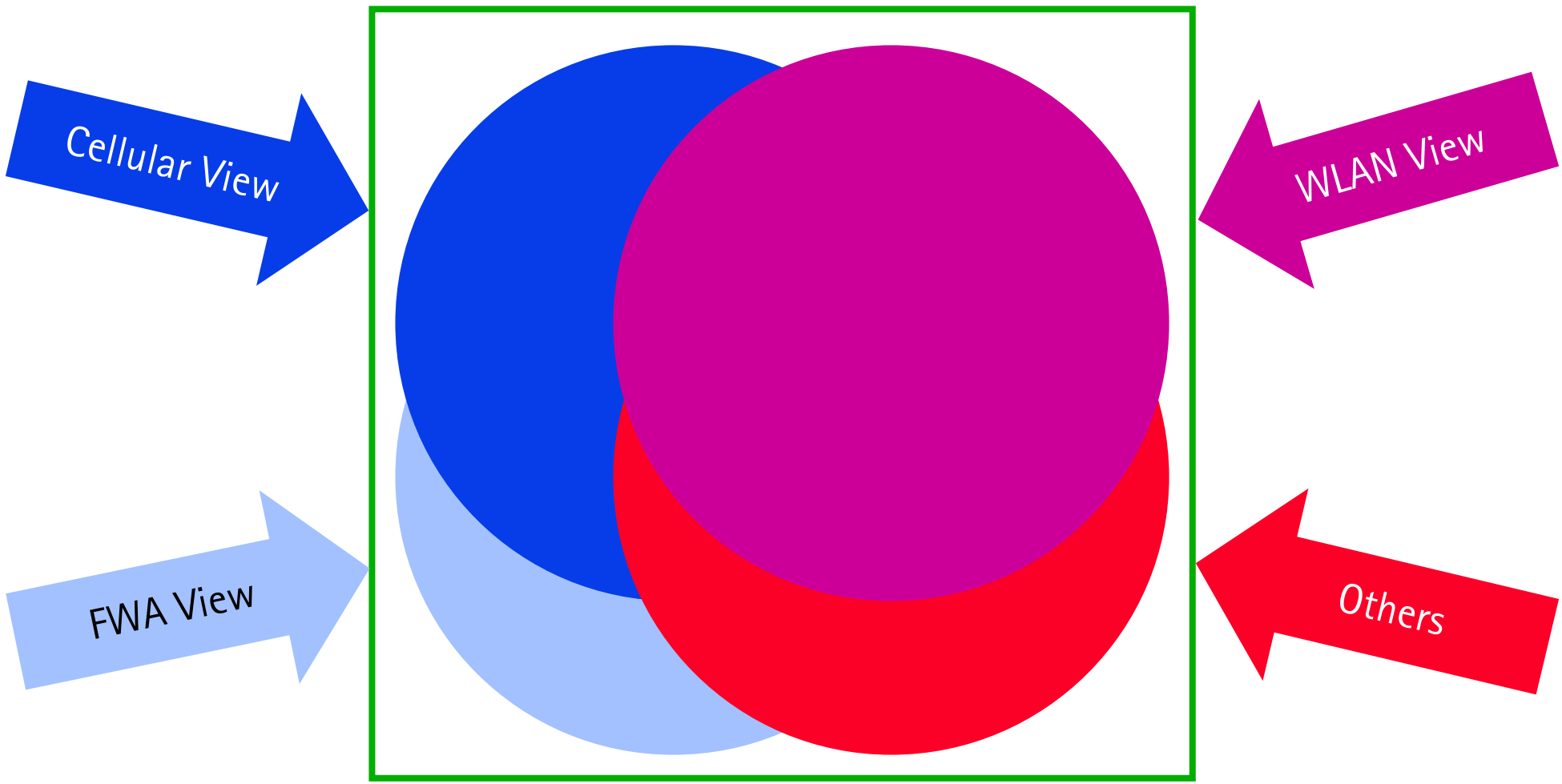
=> A single standard taking these issues into account is the real winner!

Virgin Ground?





Viewpoints



TARGET !!!

Single Mobile PAR is Sufficient!

- "Pedestrian FWA" doesn't address any new market
  - Cellular provides wide-area coverage (capacity restricted by available spectrum)
  - WLAN provides high-speed hot spot coverage (cell size restricted by regulatory power limitations)
  - FWA addresses nomadicity[1] (not mobile usage)

- The core mobile speed area is 10-50 km/h and every mobile system is eager to address this space
  - Higher speeds are a niche (according to cellular usage surveys)
  - Lower speeds down to 0 km/h are automatically covered (but not as effectively as systems optimized for static deployment like FWA)

- Addressing a market that WLAN systems with extended range and cellular like deployment would cover is the business of 802.11 (802.11 is traditionally addressing the pedestrian market).

[1] *Nomadic = terminal is virtually static during usage*

Proposal

- Stick to a single mobile (incl. pedestrian as well as higher speeds) PAR
- Address only mobile frequency allocations
- Target spectrum efficiency > 4-5 bit/s/Hz (existing solutions provide 2-3 bit/s/Hz) in a cellular deployment
- Speeds up to 100-120 km/h must be supported, up to 250 km/h can be considered (optional), speed classes to be defined
- Separate parameter settings for speed classes are encouraged to optimize the performance

- Reside the potential new project within 802.16

- A separate SG/TG for nomadicity can be formed (to study whether any major changes are necessary)

Proposed PAR Text

” This standard specifies the physical and media access control layer of the air interface of interoperable mobile broadband wireless access systems targeting a spectrum efficiency of 4-5 bit/s/Hz (i.e. 5+Mbps@1.25MHz or 20+Mbps@5MHz channel bandwidths). This standard supports cell sizes appropriate to ubiquitous metropolitan-area networks and supports mobility classes up to 250 km/h with emphasis on below 120 km/h. It applies to systems operating in licensed bands allocated by the ITU-R or other radio regulators to the Mobile Service. [Systems may employ either a TDD or an FDD channel structure]. The air interface is designed to carry IP based traffic.”