Fixed Mobile Convergence – Evolution of IMS

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Topics to Be Discussed

- **History of IMS**
- **IMS Adoption outside of 3GPP**
- **Preventing IMS Fragmentation**
- **Next Steps for IMS**
- **Conclusions**

History of IMS

Why 3GPP Developed IMS

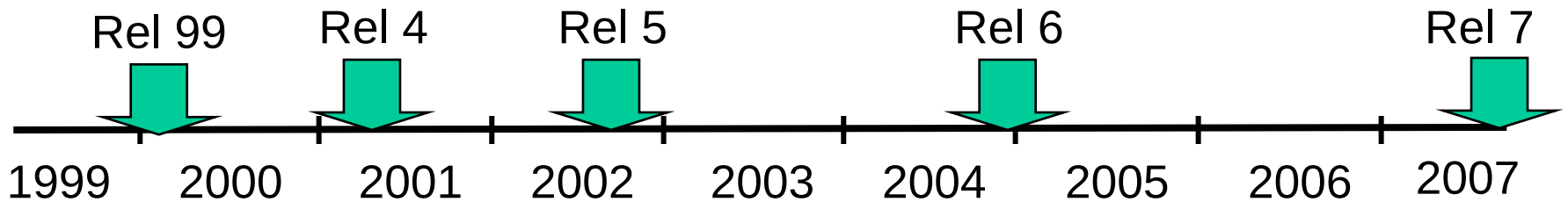
- **Development of IMS started around 2000**
  - **Term IMS was not coined until later**
  - **Input from 3G.IP and MWIF**
- **Needed services to take advantage of higher bandwidths becoming available**
- **IP transport becoming prevalent**
- **SIP/SDP existed but was inadequate by itself**
  - **Insufficient operator control**
  - **No standardized charging mechanisms**
  - **Many regulatory requirements not met**
- **Originally not viewed as a circuit switched replacement**

IMS Principles

- **IP based transport**
  - **Tailored for multimedia services**
- **Home control of services**
  - **Allows operator differentiation**
  - **Services the same when roaming**
- **Access independent**
- **Security at 3G level**
- **Roaming fully supported**

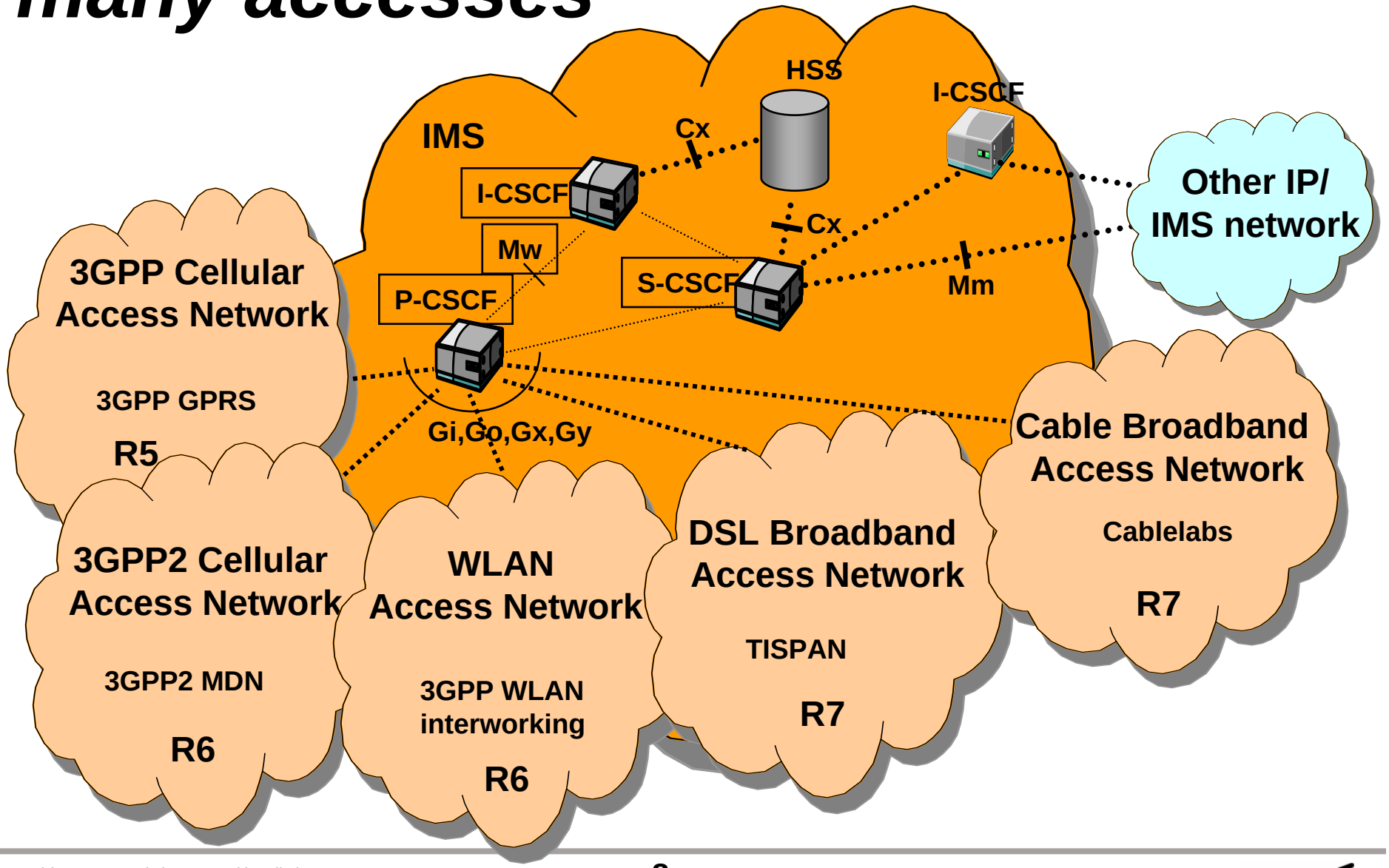
3GPP IMS Timeline

- 3GPP specified IMS as part of Rel 5 with improvements in Rel 6
- 3GPP specified UMA as part of Rel 6
- 3GPP added support for I-WLAN in Rel 6
- 3GPP is enhanced IMS to support fixed broadband in Rel 7
- 3GPP added robustness enhancements for multimedia in Rel 7
- 3GPP added Voice Call Continuity in Rel 7



IMS Adoption Outside of 3GPP

IMS now being used for many accesses



Key rationales for transitioning to IMS

- **Mobile Operators – Deploy novel services to increase usage**
- **Fixed Operators – Capex/Opex reduction and competitive service offerings**
- **Integrated Operators – Service continuity across domains**

Preventing IMS Fragmentation

IMS Variations Grow

- IMS has been adopted by other SDOs as the basis of their solutions, but fragmentation still exists:
  - Problem: Different requirements and usage scenarios from different industry segments
  - Problem: Unnecessary deviations in functions related to IMS
  - Problem: Different SDOs interpret the base IMS Standards differently

IMS Collaboration Workshops

- **April 3-4, 2002 (Toronto, Canada)**
  - **Agreement that 3GPP2 would reuse 3GPP IMS**
  - **Agreement on common IMS terminology**
- **March 30-31, 2005 (Washington, DC)**
  - **Agreement that TISPAN would reference 3GPP IMS specs**
  - **Agreement to incorporate IMS changes into Rel 7**
  - **Agreement on early production of TISPAN required specifications**
- **Sept 28-29, 2006 (Palm Springs, California)**
  - **Agreement to create open IMS requirements group**
  - **Agreement on submission process for Cablelabs enhancements**

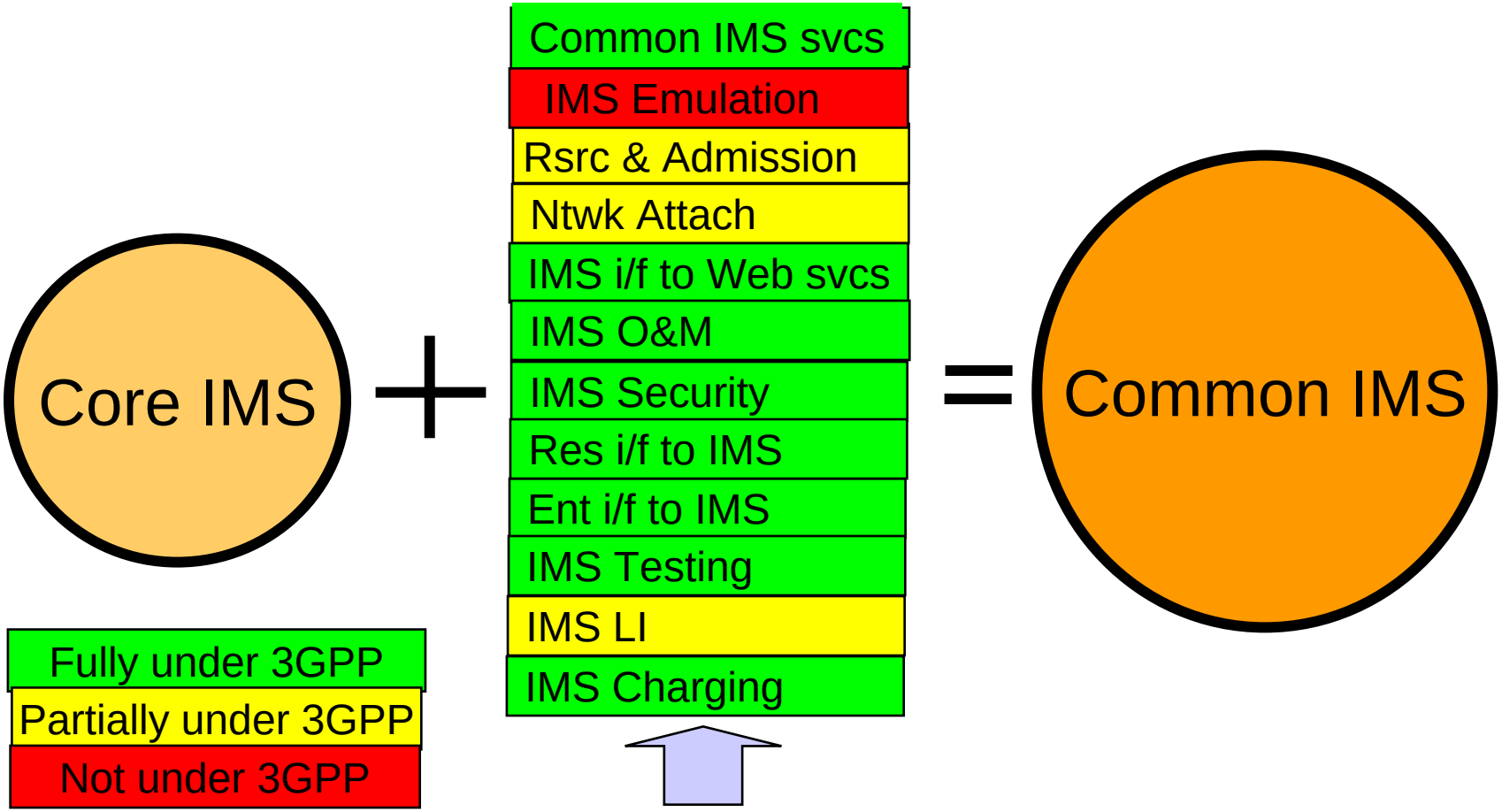
3GPP Initiative: Open IMS

- Goal: Provide a single “place” for industry segments to meet to discuss and standardize IMS requirements
- Solution: 3GPP will host the open IMS group.
- SA1 (the 3GPP requirements group) has been re-scoped to address generic requirements (not only mobile requirements).
  - New Charter to cover requirements from any industry segment
  - New Elections
  - Special Fairness Rules (in process of being specified)
  - Participation requires joining 3GPP (due to IPR concerns)
- See http://www.3gpp.org/ftp/Op/OP_17/DOCS/OP17_07.zip

3GPP Initiative: Common IMS

- **Goal: Extend the Scope of work done in 3GPP to include many areas related to IMS**
- **Solution: 3GPP Commits to address needs in areas related to IMS.**
  - **(See next slides for areas)**
- **See http://www.3gpp.org/ftp/Op/OP_17/DOCS/OP17_05.zip**

Common IMS Scope



Candidate areas for scope of Common IMS

*Common IMS Recommendations**

1. **Common IMS Services:**
   - **Yes, but inclusion decided on case-by-case basis**
2. **IMS Based Emulation**
   - **No**
3. **Resource and Admission Control**
   - **Yes for i/f used towards IMS**
   - **No for other parts, subject to further analysis**
4. **Network Attachment**
   - **Yes for i/f used towards IMS**
   - **No for other parts, subject to further analysis**
5. **Web Services Interface for IMS**
   - **Yes**
6. **Operations & Maintenance for IMS**
   - **Yes, for O&M of functions included in Common IMS**

*See full report for additional information and conditions on each recommendation

Common IMS Recommendation (Continued)

7. **Security for IMS**
   - **Yes, see report for specific functions**
8. **Residential Networks Interface for IMS**
   - **Yes, once requirements available**
9. **Enterprise Networks Interface for IMS**
   - **Yes, once requirements available**
10. **Testing for IMS**
    - **Yes, for testing of functions included in Common IMS**
11. **Lawful Intercept of IMS**
    - **Yes, for intercept of functions included in Common IMS**
    - **No, for regional aspects**
12. **Charging Interface towards IMS**
    - **Yes**

*See full report for additional information and conditions on each recommendation

Progress so far

- **SA1 rechartered as new generic requirements group and first meeting held.**
- **Joint meeting held between TISPAN WG1 and SA1 to transfer TISPAN deliverables.**
- **Requirements for fixed multimedia services transferred from TISPAN to 3GPP**
- **Discussions starting with 3GPP2 on merging 3GPP2 IMS work back into 3GPP**

Next Steps for IMS

Next Steps for 3GPP

- **Integrate variations from other SDOs into 3GPP IMS (and related common IMS areas)**
- **Continue work on CS to IMS service integration**
- **Ensure all regulatory requirements met**

IMS Functionality Timeframes

	Cellular Operators	Wireline Operators	Cable Operators
Basic IMS	**3GPP R5**	**3GPP R6 (WLAN)**	**3GPP R7**
Robust Multimedia	**3GPP R7**	**3GPP R6 (TISPAN R1)**	**3GPP R7**
Transition Services	**3GPP R7 (VCC, CSI)**	**?**	**?**
Integrated Services	**3GPP R8**	**3GPP R8**	**?**

Conclusions

Summary

- **IMS under development in 3GPP since 2000**
- **Originally viewed as a way to develop value added services using IP technology**
- **Wide acceptance of IMS as basis for multimedia IP networks**
- **Open IMS and Common IMS are mechanisms to avoid IMS fragmentation and appear to be succeeding**
- **3GPP fully committed to ensure IMS meets the needs of all industry segments.**

Further Information of 3GPP and IMS

- www.3gpp.org