The validation work

Johann Mika
ORS
5G-MAG Reference Tools
Task Force Leader
> The next step

Standardization  Testing and implementation
• Started in Summer 2021

• Scope
  • create common open-source reference tools to support implementation and interoperability of 5G Media technologies
  • for validation, verification, demonstrations, trials and commercial services

• Open-source community with participation not limited to 5G-MAG Members

• Contributions from companies, researchers, independent developers,...
> 5G-MAG Reference Tools - Organization

(Internal) 5G-MAG Task Force
https://member.5g-mag.com/

Under Workgroup CD-T
Content Distribution-Technology

Task Force Reference Tools
Definition of roadmaps
functionalities from 5G-MAG Work Items,
implementation prioritization,
discussions about architecture,
answering questions from developers

(External) 5G-MAG Developer Community
https://github.com/5G-MAG
https://groups.google.com/g/5g-mag-reference-tools
http://5g-mag.slack.com

Open Developer Community
users, developers,
contributors
discussions about
implementation of features,
issue tracking

Direct exchange between standardization
leaders and software developers and users
• Development of Rel-16 5G Media Streaming and 5G Broadcast

• Focus on
  • Client components
  • Server/headend
  • 5G unicast and broadcast radio emulators

• Provide E2E-platform for
  • Applications
  • Service Layers

1LTE-based 5G terrestrial broadcast system, ETSI TS 103 720
Use-Case: Seamless switching between Broadcast and Broadband

5G Broadcast with unicast fallback
• Use-Case: Seamless switching between Broadcast and Broadband
  • 5G Broadcast with unicast fallback
  
  ![Broadcast Broadband Seamless Switching](image)

• Next steps
  • Use-Case: Hybrid service
    5G Media Streaming and 5G Broadcast
  • Use-Case: Broadcast-on-Demand
  • DVB-I Use-Cases?

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1LTE-based 5G terrestrial broadcast system, ETSI TS 103 720
The link to DVB-I over 5G

• Use existing framework of 5G-MAG Reference Tools for DVB-I over 5G use-cases

• Commercial Requirements for DVB-I over 5G:
  - Use case 1: DVB-I over 5G Media Streaming
  - Use case 2: 5G Broadcast/Unicast hybrid delivery to handheld devices
  - Use case 3: 5G Broadcast standalone with Unicast for EPG
  - Use case 4: 5G Fixed Wireless Access
  - Use case 5: DVB-I Services to vehicle infotainment systems over 5G
  - Use case 6: DVB-I Hybrid Service over 5G

Cross-Standards Reference Platform for 5G Media and DVB-I service layer implementation
The summary

• Standards are not the final step → V&V needed

• Exchange between standardization leaders and developers is key in helping industry stakeholders to further develop the ecosystem

• 5G-MAG reference tools support implementation and interoperability of 5G Media technologies

• Initial focus on Rel-16 5G Media Streaming and 5G Broadcast

• DVB-I over 5G can leverage the already existing framework of 5G-MAG Reference Tools for implementing the use-cases

• Collaboration between DVB and 5G-MAG will help to understand each other's requirements and thus helps to develop the best experience for the users
INTERESTED IN PARTICIPATING?
REACH OUT TO OUR COORDINATORS

Task-Force 5G-MAG Reference Tools Leader
Johann Mika
Company: ORF/ORS
Contact: reference-tools@5g-mag.com

Developer's Team Coordinator
Daniel Silhavy
Company: 5G-MAG
Contact: reference-tools@5g-mag.com

Many thanks!

5G-MAG Reference Tools coordination/communication channels
Website (general information): www.5g-mag.com/reference-tools
Github (code, documentation): https://github.com/5G-MAG
Google group (developers): https://groups.google.com/g/5g-mag-reference-tools
Slack (developers): http://5g-mag.slack.com
Email (reflector): reference-tools@5g-mag.com