

Latest News from 5G-MAG's Standards and Software Activities

5G-MAG Association

May 2026

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5G-MAG – The Media Connectivity Association

WHAT WE DO

Standards and Software for Connected Media Experiences

content **delivery**, **real-time**, **events**, **entertainment**, **gaming**, **immersive media**,...

Optimizing the **apps**, **protocols** and **networks** that drive **connected media**

Internet technologies, **5G/6G**, **cloud**, **AI**, **smart networks**, **devices**, **codecs**, **protocols**,...



HOW WE WORK

Driving Open Specifications

scalability, interop, trust

Hands-On Work

tangible **outcomes**, little **admin**

Developing Open-Source Software

adoption, testing, efficiency

Industry Collaboration

neutral, international, non-for-profit **association**

Our Work in 3 Steps

Pre-Standardization

Collaboration
scenarios

Reference
use cases

Market-driven
requirements

Supporting Standards Development

Feasibility studies
and profiles

Feedback to
standards

Implementation
guidelines

Post-Standardization

Open-source
Software

Standards
validation

Prototypes, testbeds,
ecosystem-drive

Standards and Software for Connected Media Experiences



tech.5g-mag.com

standards.5g-mag.com

Engagement in Technology & Standards

Supporting development of specifications...

To empower Next-Gen Connected Media Application and Services

Connectivity Quality Management
Multicast & Broadcast Systems
Data Collection and Analytics

Computing & Storage Resources
Terrestrial & NTN Networks
Network APIs



Streaming and Content Delivery
Uplink Media and Content Production
Immersive Media Experiences
Conversational Real-Time Experiences

Internet-based Protocols
Advanced Video/Audio Codecs
Real-Time Communication

Connected Devices
Home, On-the-go, Automotive
Head-Mounted Displays



3GPP Market Representation Partner

5G-MAG is a 3GPP Market Representation Partner (MRP)



«The 3GPP Organizational Partners may invite a Market Representation Partner to take part in 3GPP, which has the ability to offer market advice to 3GPP and to bring into 3GPP a consensus view of market requirements (e.g., services, features and functionality) falling within the 3GPP scope.»

As 3GPP MRP we:



Collaborate in applying specifications to real-world applications and services

Provide feedback to 3GPP while developing reference implementations



Provide a framework for collaborative open-source software development

Support Work by maintaining and hosting Tesbeds and Evaluation Frameworks

Our Current Topics



**Streaming,
Media Delivery and
Data Collection**

 +   



**5G Broadcast
for TV, Radio and
Emergency Alerts**

 +  



**Multicast and
Broadcast Services
in 5G Networks**

 + 



**Non-Public
Networks for
Content Production**





**Network Capability
Exposure through
Network APIs**



**Non-Terrestrial
Networks for
Content Delivery**





**XR: 3D Scenes
and Avatar
Communications**

 +  



**Volumetric Video
and Beyond 2D
Video Experiences**

 + 



**Getting ready
towards
6G Media**



[illegible]



REFERENCE
< TOOLS />

Collaborate. Create. Play



developer.5g-mag.com

Software Developer Community

About the Software Developer Community

Transforming Specs into Implementations via Open-Source Software



Standards validation, interop, early prototyping and testing



Ready-to-use code in production environments and as benchmark

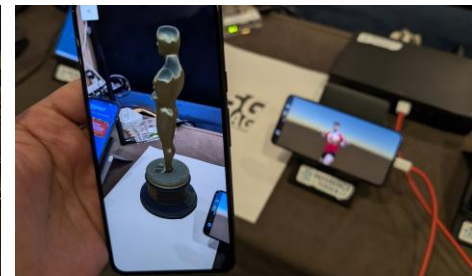


Shared development effort avoids duplication across companies



Transparency, trust and collaborative enhancements

Download a dedicated slidedeck



An IPR-friendly License Model

A License Model for contributions and usage adapted to industry's needs

5G-MAG balances open-source collaboration with commercial-grade IPR protection, ensuring a sustainable ecosystem for technology implementation.

Software & Dependencies

- Main Repositories: Covered by the **5G-MAG Public License** to protect contributor IPR.
- Third-Party Code: Utilizes forks of external projects to maintain baseline compatibility.

5G-MAG Public License v1.0

- A modified **Apache 2.0 license aligned with ETSI/3GPP FRAND policies**.
- Free Use: For non-commercial, research, and testing purposes.
- Commercial Use: Includes a patent clause allowing contributors to license IPR under Fair, Reasonable, and Non-Discriminatory (FRAND) terms.

Contributor License Agreement

- To cover code contributions from Individuals (CLA) and companies (CCLA)

www.5g-mag.com/license

Join the Software Developer Community

Current official contributors to the 5G-MAG Reference Tools



We remain fully open and welcome more contributors joining efforts



developer.5g-mag.com

Our Current Projects, Tools and Testbeds

The Software Projects

Application domains of the 5G-MAG Reference Tools Software Projects

5G REFERENCE
MAG < TOOLS />



**Streaming,
Media Delivery and
Data Collection**

3GPP + OCTA SVTA DASH

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**5G Broadcast
for TV, Radio and
Emergency Alerts**

3GPP + ETSI IETF

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**Multicast and
Broadcast Services
in 5G Networks**

3GPP + IETF

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**XR: 3D Scenes
and Avatar
Communications**

3GPP + MPEG KRONOS

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**Volumetric Video
and Beyond 2D
Video Experiences**

3GPP + MPEG

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**Applications and
Services using
Network APIs**

3GPP + CAMARA

Build an Application

The Projects

The Testbeds

Testbeds and Evaluation Frameworks

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 **6G Testbed and
AI Traffic
Characterization**

 Qualcomm

5G REFERENCE
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 **AI & Machine
Learning in
5G Media Services**

 Interdigital

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 **Beyond 2D
Video
Experiences**

 PHILIPS

Testbeds and Evaluation Frameworks

Roadmaps

5G-MAG Reference Tools - Roadmaps

All 5G Media Streaming 5GC Components UE Data Collection 5G Broadcast Emergency Alerts 5G Multicast Broadcast Service Multimedia Content Delivery XR Media with MPEG-V3C Immersive Platform

label: "Project: 5G Media Streaming"

Candidates 1

This is a candidate for future work.

Getting-Started #126
Advanced Media Delivery (AMD) - In-band reporting of CMCD information

Under Study 1

This is under study.

Getting-Started #137
Cloud Deployment support

Under Development 4

This is actively being worked on.

Getting-Started #132
Dynamic Policies (M1 Policy Templates API + M5 Dynamic Policies API)

Completed 0

This has been completed.

Completed + Tested 6

Getting-Started #134
Consumption collection and reporting

Getting-Started #130
Implementation of M1d Provisioning APIs

Getting-Started #133
QoE metrics collection and reporting

Getting-Started #129
Implementation of AF to AS RESTful OpenAPI (M3)

Getting-Started #128
Support for basic media session handling (Application Function + Media Session Handler)

Getting-Started #127
Support for basic media stream handling (Application Server + Media Stream Handler)

All the contributions, on-going developments and opportunities for contributors

Roadmaps

Tutorials and Contributions

Multimedia Content Delivery Protocols

GPAC Flute interop with 5G-MAG Reference Tools

Sohaib Larbi
Motion Spell

Tutorial

BBC Dolby Fraunhofer FOKUS Qualcomm

5G Media Streaming Architecture

5G Media Streaming in the BBC standalone testbed

Richard Bradbury, David Waring,
Dev Audsin and John Elliott
BBC R&D

Tutorial

BBC Dolby Fraunhofer FOKUS Qualcomm

5G Broadcast TV and Radio Hybrid Services

Unicast/Broadcast Seamless Switching

Klaus Kühnhammer
ITEAM-UPV

Daniel Silhavy
Fraunhofer FOKUS

Tutorial

Bitstream Fraunhofer FOKUS ORS Qualcomm UNIVERSITAT POLITÈCNICA DE VALÈNCIA

XR Media with MPEG-I Scene Description

XR Unity Player in 5G-MAG Reference Tools

Imed Bouazizi
Qualcomm

Tutorial

Qualcomm Interdigital

5G Media Streaming Architecture

5GMS with Application Provider Portal

Vuk Stojkovic
Fraunhofer FOKUS

Tutorial

BBC Dolby Fraunhofer FOKUS Qualcomm



UE Data Collection, Reporting & Event Exposure

Docker Setup with Insomnia REST Client

Daniel Silhavy
Fraunhofer FOKUS

Tutorial

BBC Fraunhofer FOKUS

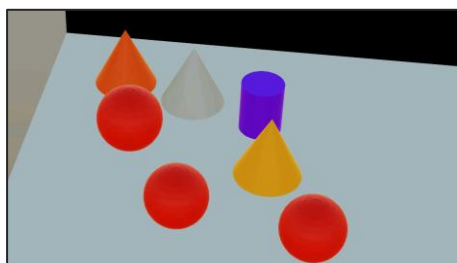
5G Multicast Broadcast Services

Initial support of 5MBS core network functions

Borja Inesta Hernández
ITEAM - UPV

Tutorial

BBC UNIVERSITAT POLITÈCNICA DE VALÈNCIA



V3C Immersive Platform

Unity Player for Android with DASH Streaming Server

Tutorial

Interdigital PHILIPS



Join us and support the activities!

Structure

Member-driven

Bottom-up work and topics

Minimum bureaucracy

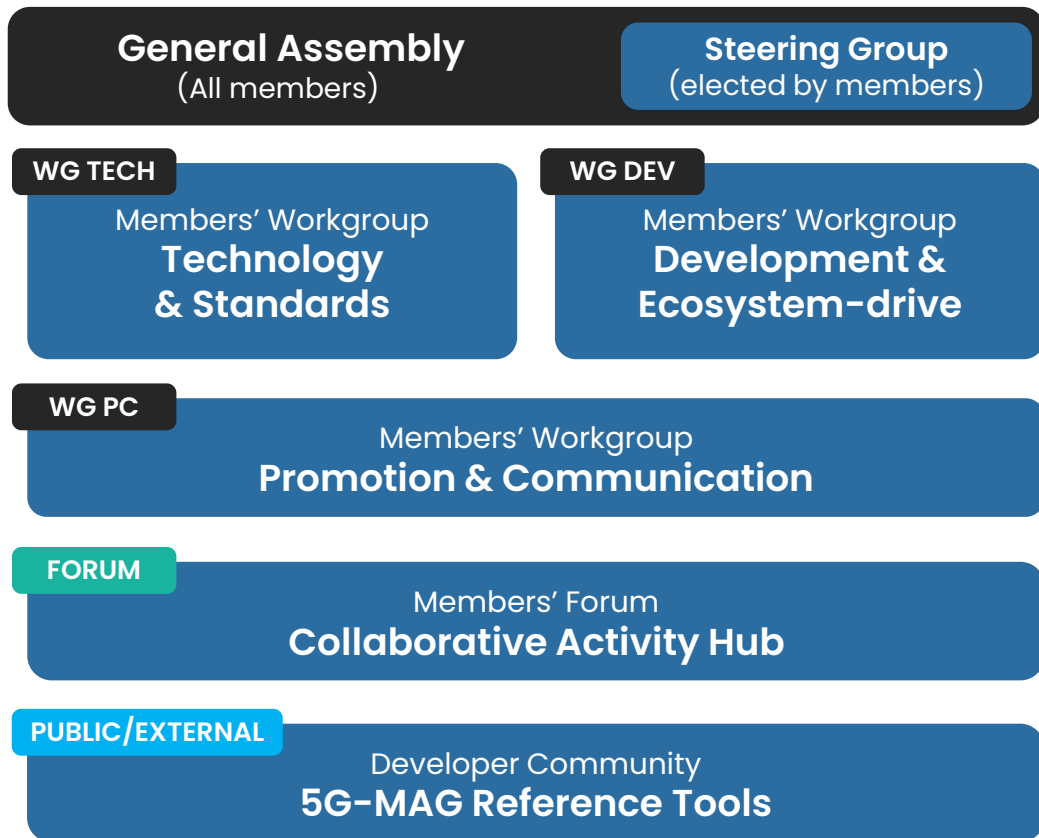
to concentrate on the actual work

Maximizing efficiency

by limited telcos & on-line work

Contribution-driven

to ensure relevance of the work



The Outcomes and Resources

Member-driven work + execution supported by 5G-MAG resources

hub.5g-mag.com

Access to all repositories: github.com/5G-MAG/

5G-MAG EXECUTION PLANS: github.com/orgs/5G-MAG/projects/44

5G-MAG REFERENCE TOOLS ROADMAPS: github.com/orgs/5G-MAG/projects/48

tech.5g-mag.com

Technology analysis, discussion and documentation

standards.5g-mag.com

Requirements towards SDOs: hub.5g-mag.com/Standards/pages/requirements.html

Liaison Statement and Inputs to SDOs: hub.5g-mag.com/Standards/pages/ls.html

Feedback to Specifications: hub.5g-mag.com/Standards/pages/feedback.html

Work Items, Specifications and Technical Reports: hub.5g-mag.com/Standards/pages/standards.html

Issues: github.com/5G-MAG/Standards/issues

Project board: github.com/5G-MAG/Standards/projects

Discussions: github.com/5G-MAG/Standards/discussions

developer.5g-mag.com

Access to 5G-MAG Reference Tools (information, repositories, tutorials,...)

How does 5G-MAG support the industry and you?

← 5G-MAG supporting the industry

Driving the development of **open standards** for connected media services

Contributing industry's feedback to SDOs in a coherent way

Supporting open-source software implementations towards products

Accelerating adoption of global **connectivity solutions** for media

Fostering tech interoperability and trust

→ 5G-MAG supporting you

Understanding standards, specifications and **technologies**

Creating collaboration opportunities with partners

Contributing consensus-driven requirements to SDOs

Scouting opportunities for projects and funding aligned to 5G-MAG's work

Promoting your work at events

Who is supporting our work?



Join, support the work and benefit

Who is supporting our work?

Check the list of members at www.5g-mag.com/membership

Membership Fee Category LARGE	Annual Revenues > €1 billion	Annual Membership Fee € 15.000
Membership Fee Category MEDIUM	Annual Revenues €100 million – €1 billion	Annual Membership Fee € 10.000
Membership Fee Category SMALL	Annual Revenues €5 million – €100 million	Annual Membership Fee € 5.000
Membership Fee Category MICRO	Annual Revenues < €5 million	Annual Membership Fee € 2.000

The **Micro** category also includes: **Universities, Regulators, Public research bodies, Institutions, NGOs, and non-for-profit organizations**

Fostering industry collaboration

Workshops

www.5g-mag.com/workshops

Open-Source Media Application Reference Tools (OSMART)

<https://osmart-community.github.io/>



Open-Source Core Applications RAN (OSCAR)

www.5g-mag.com/oscar



Part of the Metaverse Standards Register

<https://register.metaverse-standards.org/pogs>



Promoting Technology and Members' Efforts



Follow The Handshake by 5G-MAG



The Handshake

by  The Media Connectivity Association

Now available on



Join the efforts!
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5G-MAG Association
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