



Open-Source Developer Community

Transforming Specifications into Products



Open-source Toolbox for Connected Media Applications

-  Standards validation & verification, early demonstrations and testing
-  Ready-to-use code in production environments and as benchmark
-  Shared development effort avoids duplication across companies
-  Transparency, trust and collaborative enhancements



Software Developer Community

Sponsored by 5G-MAG Members

Define the roadmap and prioritization of 5G-MAG's resources

Open to the Industry, Academia, Independent Developers,...

To collaborate and contributor your code

OFFICIAL CONTRIBUTORS WITH A SIGNED CLA



OPERATING EUROVISION AND EURORADIO



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Join the Software Developer Community



GITHUB

5g-mag.github.io/Getting-Started/

Getting Started guides with documentation, access to repos, projects, releases, tutorials,...



GITHUB

<https://github.com/5G-MAG>

Software Development is handled in GitHub. Find there all the repositories



[5G-MAG Dev Community](#)

Join us in Slack for communication between developers

tinyurl.com/join5gmagslack



Groups

[Mailing List with Releases & News](#)

Announcements and publication of new projects, software releases and documentation

tinyurl.com/join5gmagggroup



[Join the Developer Calls](#)

WG DEV: Every Friday for 5G-MAG members

Public Friday Calls

Last Friday of the month from 13:00 to 14:30 CET for everybody
5g-mag.com/community#calendar



Standards and Software – The Projects



WHERE TO LOOK AT?

[Check the Execution Plans](#)
[All the Technical Resources](#)
[Information on Standards](#)
[Reference Tools](#)



5G-MAG Reference Tools – Roadmaps

5G-MAG Reference Tools - Roadmaps

All 5G Media Streaming 5GC Components UE Data Collection 5G Broadcast Emergency Alerts 5GBC Multicast Broadcast Se Multimedia Content De XR Media with MPEG-I 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

+ Add item + Add item + Add item + Add item + Add item

<https://github.com/orgs/5G-MAG/projects/48>

5G-MAG Reference Tools – Standards Feedback

3GPP Specifications - Feedback

Kanban TS.26.501 (SA) TS.26.512 (SA) TS.26.517 (SA) TS.26.532 (SA) + New view

Filter by keyword or by field

+ Add item

<https://github.com/5G-MAG/standards/projects>

5G-MAG Reference Tools – Standards Feedback

Continuous feedback to fix specifications

<https://5g-mag.github.io/Standards/>

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

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

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

The screenshot shows a project board from 3GPP SA4 XCHANGE. The board is organized into columns representing different stages of specification review and publication:

- Pre-Acceptance:** Contains items like "T3 26.512: Add missing 'U' heritage parameter to semiannual reevaluation".
- Adopted:** Contains items like "T3 26.548 EULTE FOT Profile for SMEs & delimiter usage".
- Change contribution drafting:** Contains items like "T3 26.512 v17.3.0: Discrepancies between normative tables and OpenAIR YAMLS".
- Contributed to Working Group:** Contains items like "T3 26.512: Discrepancy between tables and YAMLS for properties marked as read-only".
- Agreed/endorsed by Working Group:** Contains items like "T3 26.512: Discrepancy between tables and YAMLS for properties marked as read-only".
- Approved for publication by Technical Committee:** Contains items like "T3 26.512: Discrepancy between tables and YAMLS for properties marked as read-only".
- Published:** Contains items like "T3 26.512: Discrepancy between tables and YAMLS for properties marked as read-only".
- Not adopted:** Contains items like "T3 26.512: MS Dynamic Policies API and Network Assistance API - Potential inconsistency in the resource structure".

The board includes several columns for tracking progress, such as "Sprint", "Review", "Implementation", and "Deployment". A prominent green button labeled "JOIN" with a hand icon is located at the bottom left of the board area.



More information at developer.5g-mag.com and 5g-mag.github.io

Software Contributors and License Model

The 5G-MAG Reference Tools software makes use of **various licenses** to distribute and accept contributions from the community, including the:

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Individuals and/or **companies** with a signed **Contributor License Agreement (CLA)** can contribute code. Reach out to us in case of doubts and any clarification.



Tutorials and Developer Xchange

Multimedia Content Delivery Protocols

GPAC Flute interop with 5G-MAG Reference Tools

Sohail Larbi
Motion Spell

i 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

i Tutorial

BBC Dolby Fraunhofer FOKUS Qualcomm

5G Broadcast TV and Radio Hybrid Services

Unicast/Broadcast Seamless Switching

Klaus Kühnhammer
TEAM-UPV

Daniel Sihlavy
Fraunhofer FOKUS

i Tutorial

Bitstem Fraunhofer FOKUS Ors group Qualcomm UNIVERSITATIS POLYTECHNICAE VALENCIA

XR Media with MPEG-I Scene Description

XR Unity Player in 5G-MAG Reference Tools

Imed Bouazizi
Qualcomm

i Tutorial

Qualcomm Interdigital

5G Media Streaming Architecture

5GMS with Application Provider Portal

Vuk Stojkovic
Fraunhofer FOKUS

i Tutorial

BBC Dolby Fraunhofer FOKUS Qualcomm



UE Data Collection, Reporting & Event Exposure

Docker Setup with Insomnia REST Client

Daniel Sihlavy
Fraunhofer FOKUS

i Tutorial

BBC Fraunhofer FOKUS

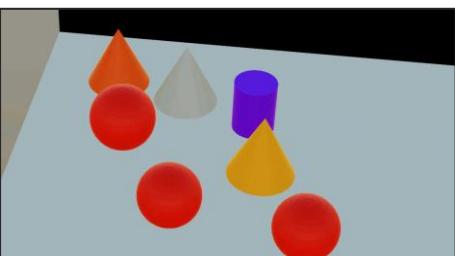
5G Multicast Broadcast Services

Initial support of 5MBS core network functions

Borja Iñesta Hernández
TEAM - UPV

i Tutorial

BBC UNIVERSITATIS POLYTECHNICAE VALENCIA



V3C Immersive Platform

Unity Player for Android with DASH Streaming Server

Interdigital PHILIPS

i Tutorial

PHILIPS





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