# Test, Measurement, and KPIs Validation (TMV) WG Introduction to TMV WG KPIs-related activities

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**Stream D / Stream B joint workshop on KPIs and KVIs
Organised by TrialsNet Project
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6GSNS

**The SNS TMV WG:**

- Is one of the three SNS JU WGs.

- Focuses on promoting commonalities across SNS projects that have strong interest in Testing & Monitoring (T&M) methodologies,

- including the development of test and measurement methods, test cases, procedures as well as the KPI/KVI formalization and validation to the greatest possible extent,

- to ensure a unique European vision on how the entire lifecycle of the 6G network, ranging from R&D to actual deployed environments, can be supported.

# 6GSNS | TMV WG Topics of Interest

**TMV WG Topics (under the Terms of Reference)**

- KPI definition, KPI sources, collection procedures and analysis

- Testing frameworks (requirements, environment, scenarios, expectations, limitation) and tools

- Testing methodologies and procedures

- KPI/KVI validation methodologies

- Testing lifecycle (i.e., testing execution, monitoring, evaluation and reporting)

- Analysis of SNS trials results and generation of insights

- Common information models for 6G Test and Measurement (6G T&M)

- Data reusability in SNS (standards for experimental data storage and labelling for EU projects to ensure data reuse, standards for experiment, methodology, data and result description)

- Electromagnetic fields (EMF) related topics (KPIs, methodologies, analysis and evaluation)

## Sub-division of Work to Topics/ Sub-Groups

| Topic/Sub-Group | Activities Status |
|---|---|
| **6G KPI definition and monitoring** | Kicked-off March 2024 |
| **6G KVI estimation** | Kicked-off April 2024 |
| **Test Data reusability in SNS** | Kicked-off March 2024 |
| **Analysis of SNS Trial results** | Postponed until 2H 2024 (related to the testing and demo phases of SNS projects) |
| **EMF** | Postponed |

The WG & Sub-WGs:

- Meet on a regular basis to perform activities on the relevant topics.
- Collect and spread relevant information by questionnaires, meetings, workshops, etc.
- Disseminate and promote some of their key findings in the form of White Papers, on a regular basis (e.g., annually).

**Focus of 6G KPI Definition and Monitoring Topic/Sub-WG**

- To update and extend the 6G KPI families (beyond the ones defined in the last two whitepapers of the 5GPPP WG).

- To update and extend the 6G KPI monitoring methodology presented in the last whitepaper (of the 5GPPP WG).

- To cross-validate findings with EU and Global efforts in the field.

- To engage all possible SNS projects in this direction.

**Workplan Phases**

- Phase 1: Collection of information

  - SNS Projects/TMV members have been asked to provide their input on KPIs definitions and monitoring methodologies
    → *Ongoing phase; open to SNS projects to provide input.*

- Phase 2: Processing of information & Generation of Results

  - TMV members are currently processing information on KPIs-related EU and Global efforts, and will work on the cross-validation of SNS projects' input thereby.
    → *Ongoing phase; open to contributions by SNS projects' representatives.*

- Phase 3: Editing of the White Paper

  - TMV members will collaborate in the editing of the White Paper to disseminate key findings.
    → *Starting phase; ToC ready; open to SNS project's representatives to volunteer as chapter editors.*

- Phase 4: Publication of White Paper

    → *Estimated deadline: beg. June 2024.*

# 6GSNS | Preview of KPIs Topic - Information Collection

| Information Field | *Notes for the Contributors on how to fill in the fields* |
|---|---|
| **KPI Family** | *KPI Family to which the KPI belongs, ITU-IMT 2030 wheels can be used as reference and further expanded.* |
| **KPI Name** | *Existing names borrowed from Standards can be used as a baseline.*<br>*BUT Projects are urged to provide ANY NEW KPIs DEFINITIONS they are investigating – extending, detailing, overloading etc. existing SDOs definitions.* |
| **Definition of the KPI in the context of the project** | *Description/ Definition of KPI. Information on where this KPI is evaluated would be valuable for better understanding of the KPI definition.* |
| **Network Layer / segments where this KPI refers to.** | *Answers shall include information on:*<br>*(1) Layers: Infrastructure, 3GPP network functions, Orchestration, Application, AI layer etc.*<br>*(2) 6G Network Segments/ Stratums: RAN, Transport, Core, Edge, Far/ Extreme Edge,*<br>*OR (3) Between Segments/ Stratums: e.g. From RAN to Core, From UE to Edge etc.*<br>*(4) Compute Infrastructure Domains: Edge Cloud, Core Cloud etc.* |
| **Target Value** | *Numeric value of the KPI target along with the metric. e.g. 5 msec, 10Gbps etc.* |
| **SDO that has already defined KPI or Target** | *Answers shall provide –if existing- the name of the SDO and/ or the Spec number with the definition or target value e.g. ITU IMT 2030, 3GPPP 22.x series, other. **If the KPIs is New this shall be highlighted.*** |
| **PoC/ UC where this KPI is evaluated -** | *Answers shall aim to provide hints on the context where this KPI is considered in each project. It is useful to provide at least the UC category.* |
| **Is your measurement method/tool able to cope with the target value of the KPI?** | *Answers shall aim to provide information on the measurability of the KPI e.g. Yes, our target value is 10 Gbit/s, and the handset is capable of generating the traffic using the indicated software tool.* |
| **Comparison with standards - Comments** | *In the case that the target value differs from SDOs defined one (if any), answers shall aim to provide hints on why this change appears - it is another definition of KPI? Is it another proposed value? Etc.* |
| **Any other Comments** | *Any other comments can be shared at this point.* |

**Expected outcome of KPIs Topic**

• Enforce collaboration between projects working on similar 6G network domains.

• Process SNS JU projects' information to:

    - Identify matches and gaps in the definition and evaluation of KPIs in the context of SNS JU projects

    - Extend, elaborate and nail down global 6G KPIs in the context of use cases and PoCs, and

    - at the same time cross-validate SNS JU project's views with the 6G EU and Global visions.

• Work will be published and further channeled to appropriate audiences.

All SNS JU Projects are encouraged to participate in TMV WG – KPIs topic

**Focus of 6G KVI Estimation Topic/Sub-WG**

- Focus on estimation and validation methodology (NOT DEFINITION), e.g.
  - measurements
  - post processing /mapping of KPI measurements.
- Define KVI metrics and target values (when possible)
- Engage SNS project addressing KVIs – e.g., Stream C projects
- Produce White Paper on 6G KVI estimation.

# KVIs Sub-Group Workplan

- **Phase 1: Collection of information**

  - Existing KVI definitions and frameworks to be consulted, so that common basis is used
    → align with 5GPPP SNVC and Sustainability Sub-Groups

  - Projects (TMV members) will be asked to provide their input on KVIs monitoring methodologies
    → address request to PMs - bi-weekly meetings starting in June 2024

- **Phase 2: Processing of information & Generation of Results**

  - TMV members will be asked (to volunteer) to work on the collected input in this phase

- **Phase 3: Editing of the White Paper**

  - TMV members will be asked (to volunteer) to collaborate in the editing of the White Paper to be released. (Q3 – Q4 2024).

**Membership of the WG:**

- Open to representatives of ongoing SNS-JU projects. Completed SNS projects can be invited.

- Limited to organisations from projects that have fully signed up to the SNS CA.

- Each member project should nominate 1-2 representatives to contribute to the work of the WG.

- Additional Observers/Experts can be invited to WG meetings by the Chairperson on a need basis or as deemed appropriate, if agreed by the WG.

To express your interest to participate in TMV WG – and KPIs Topic

please contact:

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