



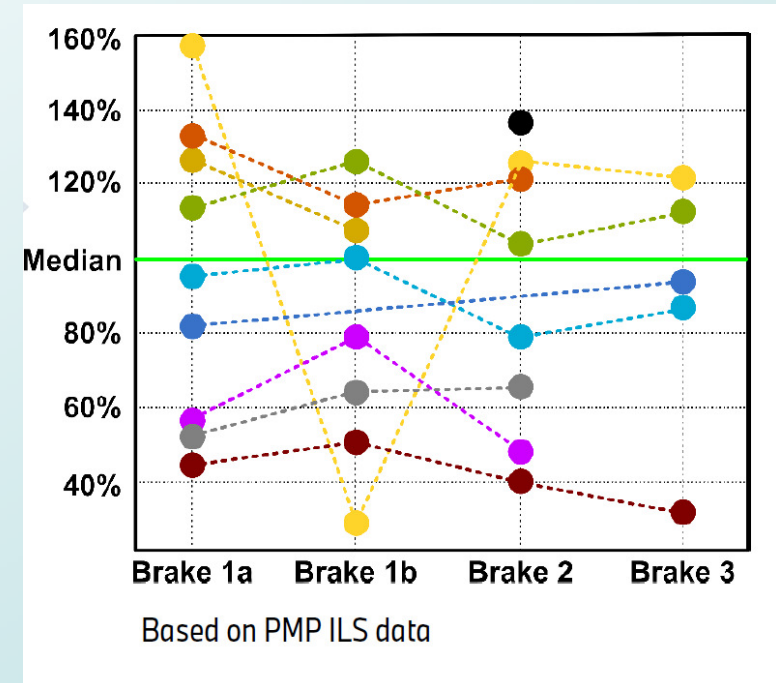
OICA CONTRIBUTION TO PMP MAY 2022

25.05.2022



Interlab measurement variability

- ILS (inter laboratory study) results show significant inter-lab variability for the same testing object (brake)
- ILS shows lower in-lab-variability for different testing objects
- Whereas the single setups seems to be quite stable, repeatability between different labs is not sufficient
- This indicates that there is a systematic difference between the labs. This difference limits the comparability of results for the same testing object
- OICA is actively contributing to the improvement of the method

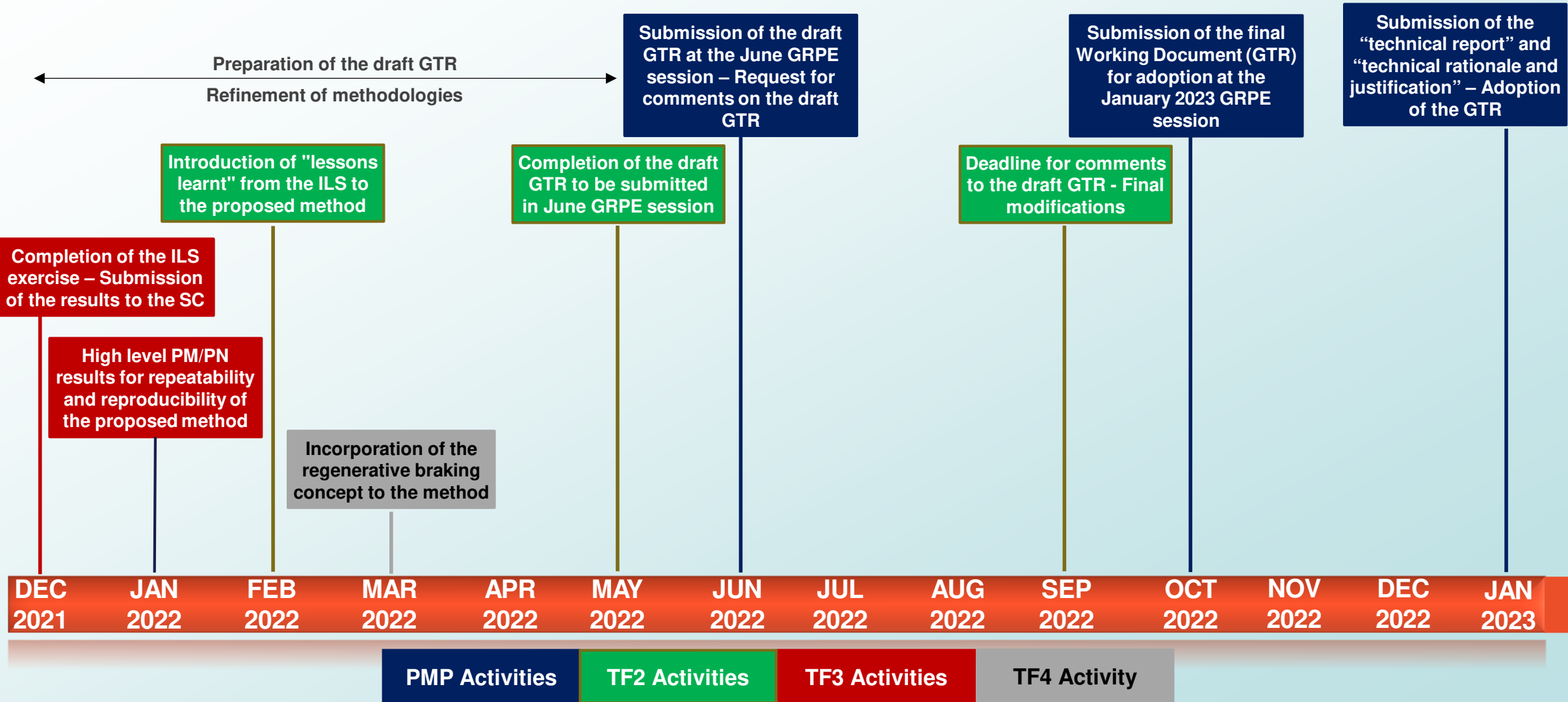


Testing method and set-up is currently not suitable for homologation



Roadmap to the GTR – PLAN DEC. 2021

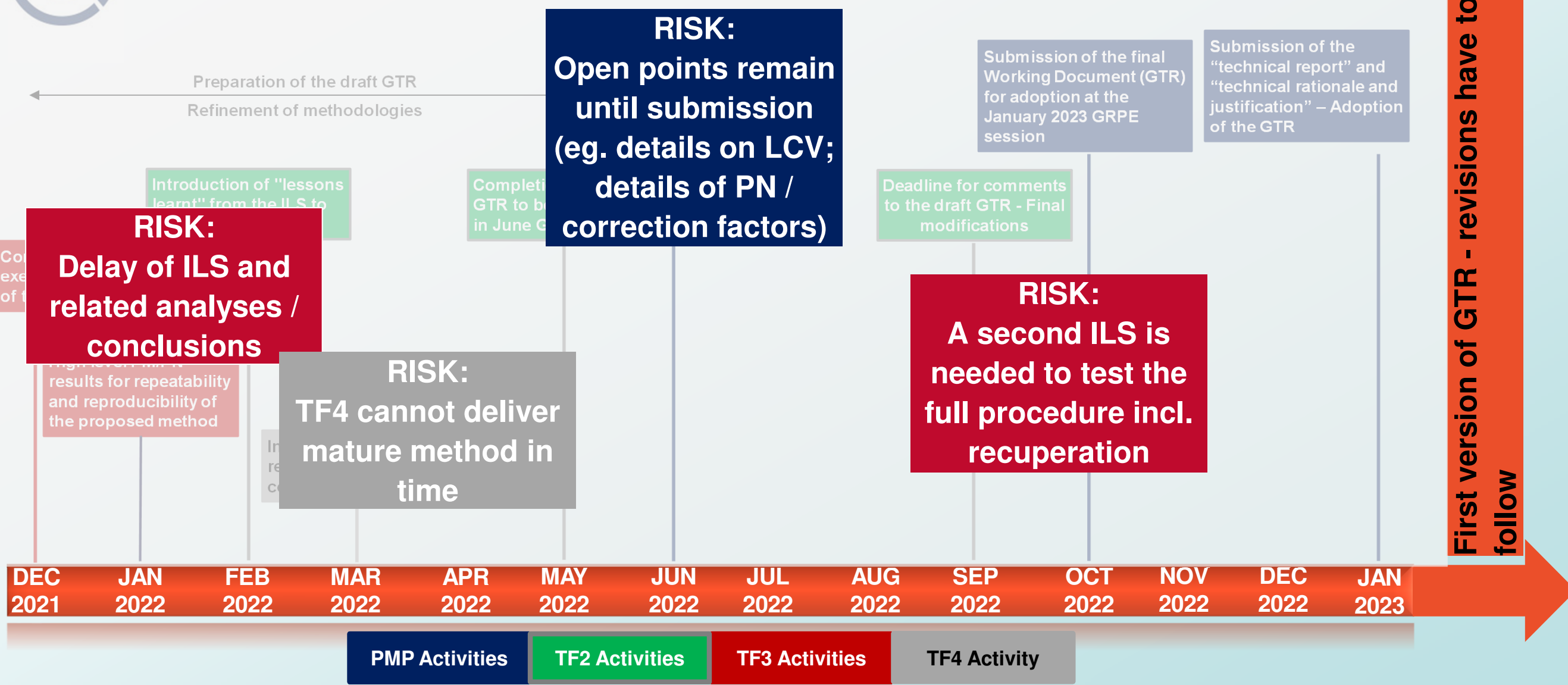
← Preparation of the draft GTR
Refinement of methodologies →



First version of GTR - revisions have to follow

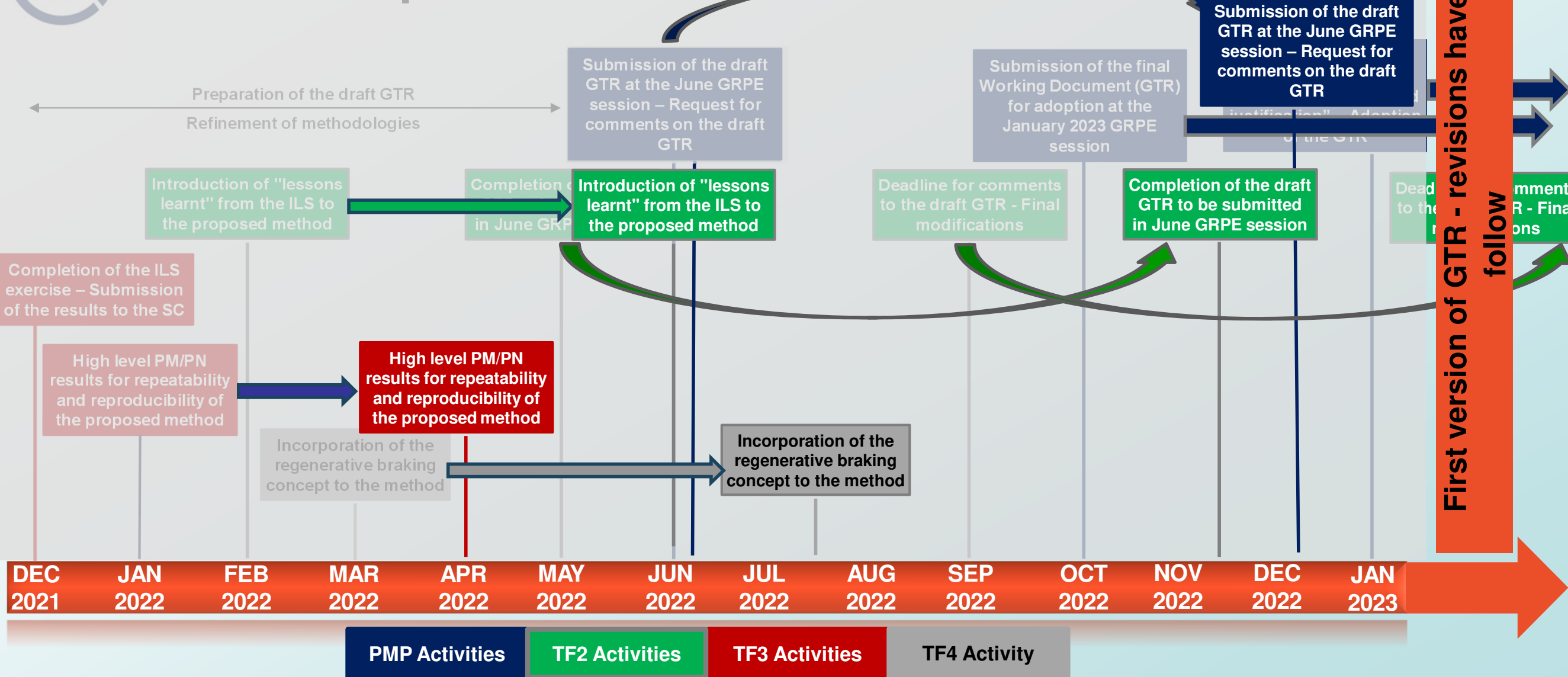


Roadmap to GTR –RISK assessment



Addressed the timing risk during ACEA workshop 11 Feb 2022

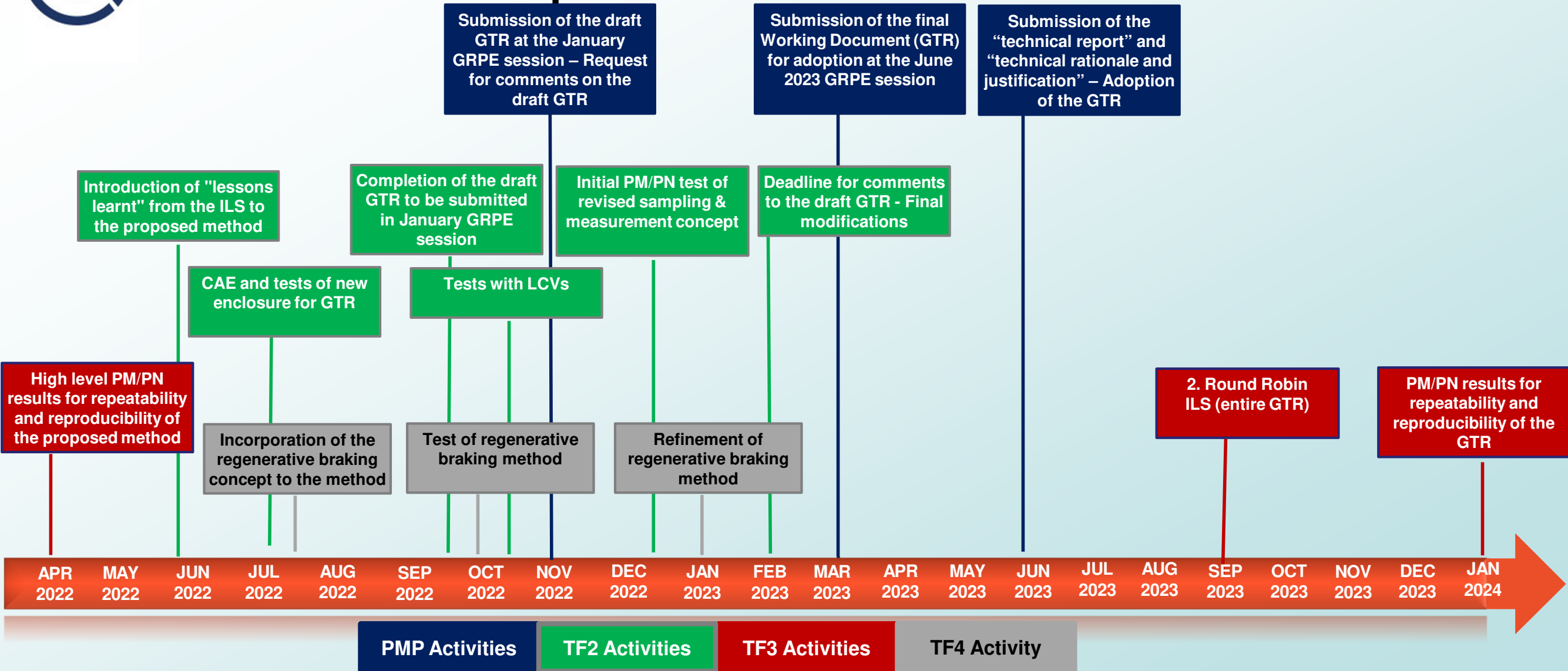
📍 Roadmap to the GTR – Revision needed



Delays cause the need revising the original time plan to the GTR



Roadmap to the GTR – Revised



Robust GTR needs shift by 6 months



Contribution from OICA

OICA/industry are supporting PMP heavily:

- **developing a robust GTR suitable for certification**
- **providing brake emission data of vehicles w and w/o regenerative braking**
- **providing brake parts and data to ILS**
- **measurements for ILS, and data evaluation (TF-3)**
- **proposals for improving of sampling system, harmonization and robustness (TF-2)**
- **development of a method to include electrified vehicles.
Co-lead of TF-4 regenerative braking**

Industry is heavily contributing and carrying most of the test work



REVISION of the GTR timeline

- **Brake wear emissions test procedure** is a entirely new test – exhaust method took decades until EURO-7
- **GTR with robust test procedure** to measure brake wear particle emissions will not be ready as informal document in June 22, which should be adopted in Jan 23
- The current **learnings from the ILS** and definition of GTR Clauses should at least be tested by CAE methods
- The vast majority of **future vehicles will be electrified**, however the test method is still immature and not verified
- A second **Round-Robin is mandatory** to test the GTR in cooperation with authorities and technical services after a reasonable number of complying test benches is installed

Do not rush for a premature GTR. Better regulation principles demand a properly mature and robust GTR - including regenerative braking - is the basis to decide any performance limits set within a sensible Euro 7 schedule



PMP meetings to share TF work

- Discussion on the definition of a standardized enclosure
- Revision of sampling ducting
- TF4 – Regen method(s)
- Solid versus total particle number (PN) counting
- Validation procedures (quality checks)
- Cooling requirement for low and high Wheel Load / Disc mass ratio
- Evaluation of the applicability of the GTR by technical services / authorities

Need to share TF work within the entire PMP group



Summary

- **OICA members are heavily supporting the development of a robust brake wear emissions GTR**
- **The original GTR time plan is not feasible anymore**
- **OICA proposes an extension by six month to develop a robust procedure**
- **The GTR needs to be tested by a second Inter Laboratory Study (ILS)**
- **Substantial details need to be aligned and agreed in PMP**