
AI for Autonomous
and Assisted Driving
AN ITU FOCUS GROUP

AI for Good
Global Summit
An ITU experience

FG-AI4AD Proposal

28th-31st May 2019

AI for Autonomous
and Assisted Driving
AN ITU FOCUS GROUP

FG-AI4AD Approval

17th October 2019

AI for Autonomous
and Assisted Driving
AN ITU FOCUS GROUP

ITU-T Focus Group on AI for Autonomous & Assisted Driving (FG-AI4AD)

- Established to address the need for a common global approach to the behavioural evaluation of AI software used for autonomous and assisted driving
- The open FG-AI4AD forum will bring together industry, academia, SDOs and regulators to contribute to this international pre-standardisation effort to create a common framework for assessing behavioural performance by developers, insurers and regulators.
- FG-AI4AD Terms of Reference specifically include supporting the ongoing efforts of UNECE WP.1 and WP.29 in the area of autonomous and assisted driving

AI for Autonomous and Assisted Driving
AN ITU FOCUS GROUP

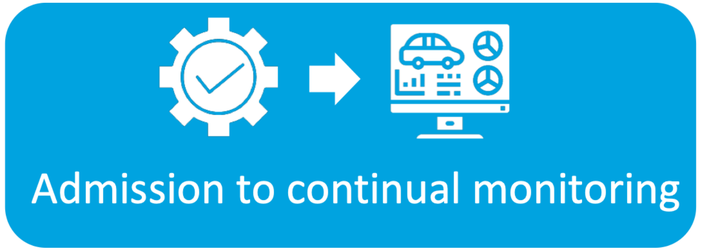
ITU-T Focus Group on AI for Autonomous & Assisted Driving (FG-AI4AD)

- Terms of Reference for FG-AI4AD were approved in October 2019
- Parent Study Group 16 leads ITU's standardisation on multimedia coding, systems and applications, including related intelligent transport system (ITS)
- Open and collaborative pre-standardisation effort for ITU-T Recommendations
- Deliverables in the form of telecommunications/ICT specification documents
- Two Year Term from Jan 2020 to Jan 2022
- Quarterly meetings to be held in different global regions

AI for Autonomous and Assisted Driving
AN ITU FOCUS GROUP

ITU-T Focus Group on AI for Autonomous & Assisted Driving (FG-AI4AD)

- Shift of focus suggested by RDW (Netherlands Vehicle Authority)



ITU-T Focus Group on AI for Autonomous & Assisted Driving (FG-AI4AD)

- Expected behavioural proofs for AI Software on our roads

Prove AI Software never engages in **careless, dangerous** or **reckless driving behaviour.**

In accordance to Article 7 of the Geneva Convention on Road Traffic ***"not to endanger"***

Prove AI Software **meets, or exceeds**, the performance of a **competent** and **careful** human driver

In accordance with Article 10 of the Geneva Convention on Road Traffic "**reasonable and prudent**" driving

Prove AI Software remains **aware**, **willing** and **able** to **avoid collisions** at all times

In accordance to Article 7 of the Geneva Convention on Road Traffic "**shall avoid all behaviour that might cause damage to persons, or public or private property**."

AI for Autonomous and Assisted Driving
AN ITU FOCUS GROUP


LEFT REARWARD VEHICLE CAMERA
MEDIUM RANGE VEHICLE CAMERA
RIGHT REARWARD VEHICLE CAMERA
MOTION FLOW
LANE LINES
LANE LINES
ROAD FLOW
IN-PATH OBJECTS
ROAD LIGHTS
OBJECTS
ROAD SIGNS

ITU-T Focus Group on AI for Autonomous & Assisted Driving (FG-AI4AD)

- The specific focus of the FG-AI4AD deliverables (which may be proposed to the parent Study Group 16 for consideration as future ITU-T Recommendations) will be in the area of;

*"**the behavioural evaluation of AI responsible for the dynamic driving task**"*
*including the "**in-use assessment of AI driving behaviour using onboard vehicle systems**" expected to become "**an integral part of the field monitoring of assisted and automated vehicles required to ensure continual validation of safety performance**"*

ITU-T Focus Group on AI for Autonomous & Assisted Driving (FG-AI4AD)

- First FG-AI4AD Meeting 21-22 Jan 2020 included contributions by;
- Professor Neville Stanton on situational awareness and emergent behaviour within sociotechnical systems
- Professor Christoph Lütge on AI Code of Ethics for Autonomous Driving
- Rahul Khatry on Independent Certification of Automated Vehicles at TRL
- Niels de Boer on Designing Singapore's AV licensing program at NTU (CETRAN)
- Professor John McDermid on Assuring Autonomy for robotics & autonomous systems (RAS) and the Sense-Assess-eXplain (SAX) model

https://www.itu.int/en/ITU-T/Workshops-and-Seminars/20200121/Pages/programme.aspx

AI for Autonomous and Assisted Driving
AN ITU FOCUS GROUP

ITU-T Focus Group on AI for Autonomous & Assisted Driving (FG-AI4AD)

- ITU-T Recommendations (ITU-T Recs) are international standards defining how telecommunication networks operate and interwork.
- ITU-T Recs are voluntary unless they are adopted in national laws.
- FG-AI4AD deliverables are expected to be;
  - A technical specification and practical demonstration of a common framework for the behavioural evaluation of AI Software
  - Policy agnostic – acceptance thresholds set by other entities including; self-certification, enhanced telematics insurers, independent safety organizations, government regulators or other.

AI for Autonomous and Assisted Driving
AN ITU FOCUS GROUP

ITU-T Focus Group on AI for Autonomous & Assisted Driving (FG-AI4AD)

- Contributions to FG-AI4AD which fall outside of the scope of ITU-T Recommendations will be delivered as guidance and notices and forwarded to relevant organizations.

- These deliverables may advance the “international harmonization” through collaborative support of existing “standardization activities” both within other ITU-T Study Groups and other external initiatives in other organizations (e.g. UNECE)

- These supplementary deliverables will originate from thorough research and collaboration with governments, non-governmental organizations (NGOs), policy makers, SDOs, industry forums and consortia, companies, academic institutions, research institutions, open source forums and other relevant organizations.

AI for Autonomous and Assisted Driving
AN ITU FOCUS GROUP

ITU-T Focus Group on AI for Autonomous & Assisted Driving (FG-AI4AD)

- Common vision on “real-world” driving assessment during ***operational use*** *in both* ***development*** *and* ***deployment***
  - ITU Focus Group on AI for Autonomous & Assisted Driving (FG-AI4AD)
  - Global Forum for Road Traffic Safety (WP.1)
    - Informal Group on Experts on Automated Driving (IGEAD)
- **PROPOSED ACTION for WP.1**:
  - Consider a liaison and collaboration of ITU FG-AI4AD and UNECE/WP.1/IGEAD

Next FG-AI4AD meeting: 4-5th May 2020

Hosted by ITU

Coinciding with the AI for Good Global Summit: https://aiforgood.itu.int/

Chair ITU FG-AI4AD Bryn Balcombe: bryn@ada.ngo

General mailing list: fgai4ad@lists.itu.int

Dedicated secretariat email: tsbfgai4ad@itu.int

Dedicated webpage: www.itu.int/en/ITU-T/focusgroups/ai4ad

AI for Autonomous
and Assisted Driving
AN ITU FOCUS GROUP