

P7001

Submitter Email: johnchavens@gmail.com

Type of Project: New IEEE Standard

PAR Request Date: 13-Oct-2016

PAR Approval Date: 07-Dec-2016

PAR Expiration Date: 31-Dec-2020

Status: PAR for a New IEEE Standard

1.1 Project Number: P7001

1.2 Type of Document: Standard

1.3 Life Cycle: Full Use

2.1 Title: Transparency of Autonomous Systems

3.1 Working Group: Autonomous Systems Validation Working Group_P7001 (VT/ITS/ASV WG_P7001)

Contact Information for Working Group Chair

Name: Alan Winfield

Email Address: alan.winfield@uwe.ac.uk

Phone: +447775803034

Contact Information for Working Group Vice-Chair

Name: kay firth-butterfield

Email Address: kay@krwmail.com

Phone: cell

3.2 Sponsoring Society and Committee: IEEE Vehicular Technology Society/Intelligent Transportation Systems (VT/ITS)

Contact Information for Sponsor Chair

Name: Dennis Bodson

Email Address: d.bodson@ieee.org

Phone: 703-243-3743

Contact Information for Standards Representative

Name: Thomas Kurihara

Email Address: t.kurihara@ieee.org

Phone: 703 516 9650

3.3 Joint Sponsor: IEEE Robotics and Automation Society/Standing Committee for Standards (RAS/SC)

Contact Information for Sponsor Chair

Name: ERWIN PRASSLER

Email Address: erwin.prassler@h-brs.de

Phone: +49 176 179 62501

Contact Information for Standards Representative

None

4.1 Type of Ballot: Individual

4.2 Expected Date of submission of draft to the IEEE-SA for Initial Sponsor Ballot: 01/2018

4.3 Projected Completion Date for Submittal to RevCom

Note: Usual minimum time between initial sponsor ballot and submission to Revcom is 6 months.: 08/2018

5.1 Approximate number of people expected to be actively involved in the development of this project: 30

5.2 Scope: This standard describes measurable, testable levels of transparency, so that autonomous systems can be objectively assessed and levels of compliance determined.

5.3 Is the completion of this standard dependent upon the completion of another standard: No

5.4 Purpose: A key concern over autonomous systems (AS) is that their operation must be transparent to a wide range of stakeholders, for different reasons. (i) For users, transparency is important because it builds trust in the system, by providing a simple way for the user to understand what the system is doing and why. If we take a care robot as an example, transparency means the user can quickly understand what the robot might do in different circumstances, or if the robot should do anything unexpected, the user should be able to ask the robot 'why did you just do that?'. (ii) For validation and certification of an AS transparency is important because it exposes the system's processes for scrutiny.

(iii) If accidents occur, the AS will need to be transparent to an accident investigator; the internal process that led to the accident need to be traceable. Following an accident (iv) lawyers or other expert witnesses, who may be required to give evidence, require transparency to inform their evidence. And (v) for disruptive technologies, such as driverless cars, a certain level of transparency to wider society is needed in order to build public confidence in the technology. For designers, the standard will provide a guide for self-assessing transparency during development and suggest mechanisms for improving transparency (for instance the need for secure storage of sensor and internal state data, comparable to a flight data recorder or black box).

5.5 Need for the Project: This standard is needed to set out expectations for transparency of AS, to the range of stakeholders outlined above, in order to build trust, provide the means to assure safety, and allow accountability and traceability. The standard will articulate a range of levels of transparency, from the minimum acceptable to 'gold' standards.

5.6 Stakeholders for the Standard: The stakeholders including users, certification, regulation or accident investigation agencies, expert professionals and society at large, are outlined above, in addition to AS designers.

Intellectual Property

6.1.a. Is the Sponsor aware of any copyright permissions needed for this project?: No

6.1.b. Is the Sponsor aware of possible registration activity related to this project?: No

7.1 Are there other standards or projects with a similar scope?: No

7.2 Joint Development

Is it the intent to develop this document jointly with another organization?: No

8.1 Additional Explanatory Notes: