SATI - SHAPE Automation Trust Index

Submitted by superadmin on Mon, 10/22/2012 - 14:45
HP Activity Categories:
Assessment of trust [1]
Resource Type:
Technique
Abstract:
SATI is part of the SHAPE questionnaires where it is the term of the trust measure. Its goal is to provide a means of measuring trust at some level, so leading to the identification of trusted and usable ATC automation tools and ultimately to effective combined human-automation ATM system performance.

The SATI is part of the SHAPE questionnaires. The SHAPE questionnaires were developed to assess the effect of automation on controller workload, situation awareness, teamwork and trust in the system.

The SATI questionnaire serves to assess the effect of automation on controller trust in the system.

References

Developer and source:
Eurocontrol
http://www.eurocontrol.int/humanfactors/public/standard_page/SHAPE_Quest... [2]

Eurocontrol (draft). The new SHAPE questionnaire: a user guide.
http://www.eurocontrol.int/humanfactors/gallery/content/public/docs/SHAP... [3].

Year of development / publication, updates etc:
2003/2007
http://www.eurocontrol.int/humanfactors/public/standard_page/SHAPE_Quest... [2].

http://www.eurocontrol.int/humanfactors/gallery/content/public/docs/DELI... [4](HRS-HSP-005-REP-03)%20Released-withsig.pdf

General Description

Purpose:

The purpose of SATI is to provide a human factors technique for measuring human trust in ATC systems. The measure is primarily concerned with trust in ATC computer-assistance tools and other forms of
automation support, which are expected to be major components of future ATM systems. It covers the following areas reliability, accuracy, understandability, confidence, liking and robusteness.

Due to its conciseness, the SATI should be mainly used for screening purposes. For a more detailed analysis of trust, it is recommended to conduct an interview in which the various facets of trust (cf. EUROCONTROL, 2003a) are addressed. SATI consists of six items which are not divided into individual scales.

The internal consistency of the new SATI is \( \rho = 0.83 \). Owing to its conciseness, SATI should also be mainly used for an initial assessment. For more detailed analyses of trust, it is recommended to conduct an interview in which the various facets of trust as well as the reason for trust and mistrust are examined.

Type (e.g. observation, questionnaire, interview, checklist, measurement instrument, etc.):

Paper and pencil questionnaire.

**Technical description of method or tool etc**

Description of the content/study:

The respondent answer six questions on the SATI questionnaire. The responses to the items are collected on a seven-point Likert scale ranging from ?never? to ?always?. These responses are pooled with those of other respondents and scores are obtained by simply added together and mean obtained per scale for all the questionnaires. The pooled data is arranged by scales.

Technical requirements for using the method, tool, etc:

None

Measure/Response Type:

Six item questionnaire scored on a seven point Likert type scale 0 through to 6 (?never? to ?always?).

Results obtained and interpretation:

Subtotal scores on each item (element of trust) can be obtained and a mean overall trust score can be derived for the system in question.

**Evaluation**

Advantages:

Concise and easy to use

Disadvantages:

No in depth coverage of trust issues

Alternative Methods:

None reported
Usability (ease of use, efficiency, effectiveness)

Ease of use:
high
Efficiency:
high
Effectiveness:
high
Constraints concerning conditions of use:
None

Reliability:
The internal consistency of the new SATI is $\equiv 0.83$

Validity:
n/a

Required effort (to conduct & to analyse):
Low

Level of HF expertise needed (required user qualification)

Medium: limited level of expertise required, some training required
Other expertise needed (required user qualification):
None

Cost Information

No cost involved, available from EURCONTROL as part of SHAPE. An electronic version is available, registration with EUROCONTROL required.

Very low: (<100 €) low costs to purchase or free license, no special devices necessary
Experiences of use by SESAR partners (including references):
n/a

Reported and/or published experiences of use (including references):
n/a

Applicability to lifecycle phase (E-OCVM):
Suitable for V3 onwards.

Application Area:
Likely to be used for existing automation or in high fidelity simulation settings

Keywords:
Trust, Automation, New systems, ATC

Short Description:
SATI is part of the SHAPE questionnaires. The SATI measure is primarily concerned with trust in ATC computer-assistance tools and other forms of automation support, which are expected to be major components of future ATM systems. It covers the areas reliability, accuracy, understandability, confidence, liking and robustness.

Source URL: http://webprisme.cfmu.eurocontrol.int/ehp/?q=node/1594

Links