



# The impact of Digital Trust on humans and their decision-making and why Trustworthy AI is the first important step

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VDE Association for Electro  
Technologies, Electronic &  
Information Technologies



**VDE**



**I am leading 3 Trustworthy AI Project 's**



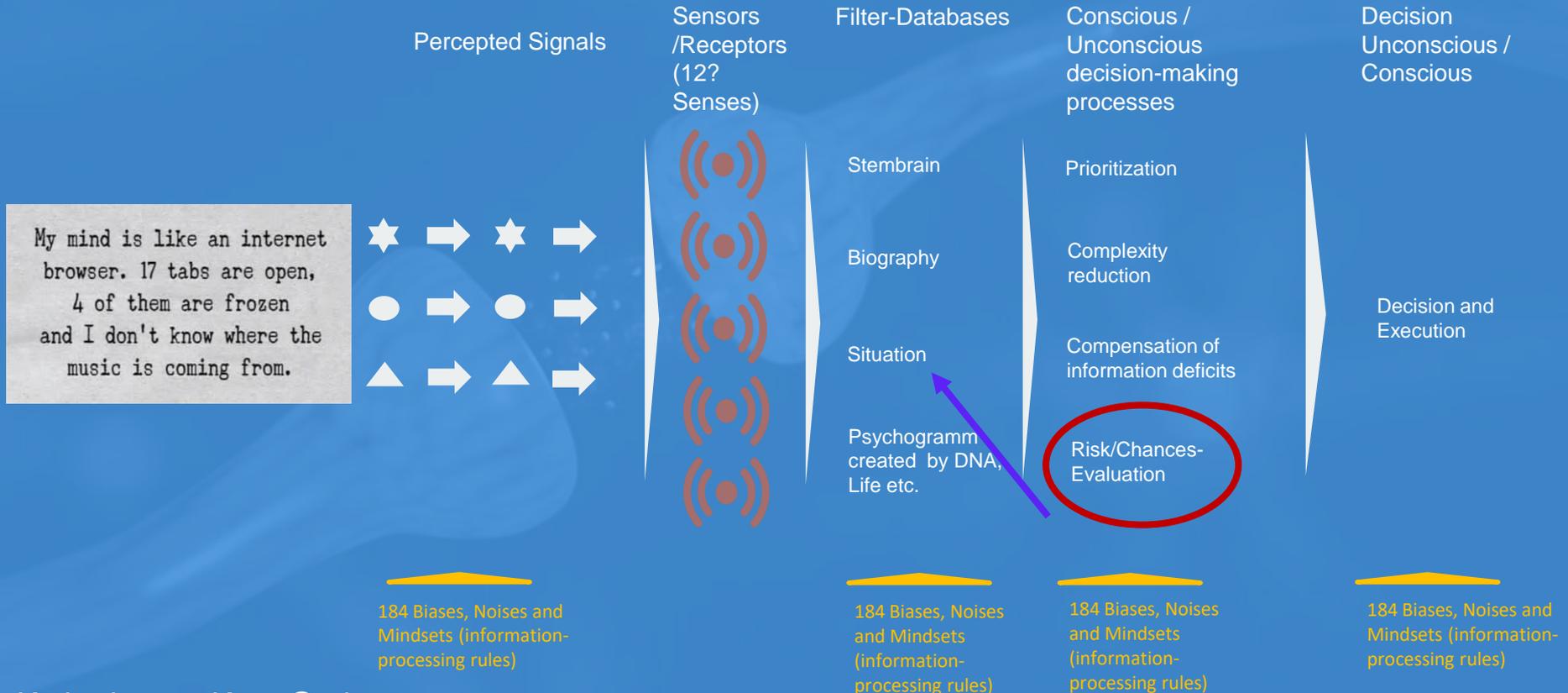
# What is Trust / Digital Trust?



Digital Trust enables us to decide to use digital solutions, to make decisions within these systems, to execute these decisions, enable us to dispense a conscious/subconscious risk-chances analysis, and to feel substantial safe, expecting that the system will behave with integrity in the correct expected way and will serve our interests.

Trust is highly cultural, fragile, dynamic, situational, topical and processual.

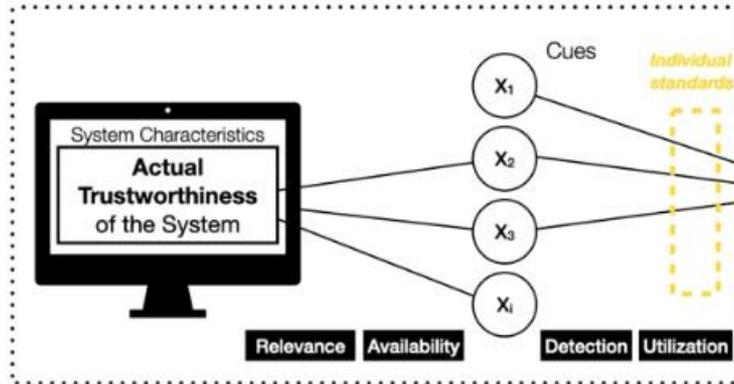
# Decision Making of humans is highly volatile in high complex impulse intense environments



# Trust Development Process

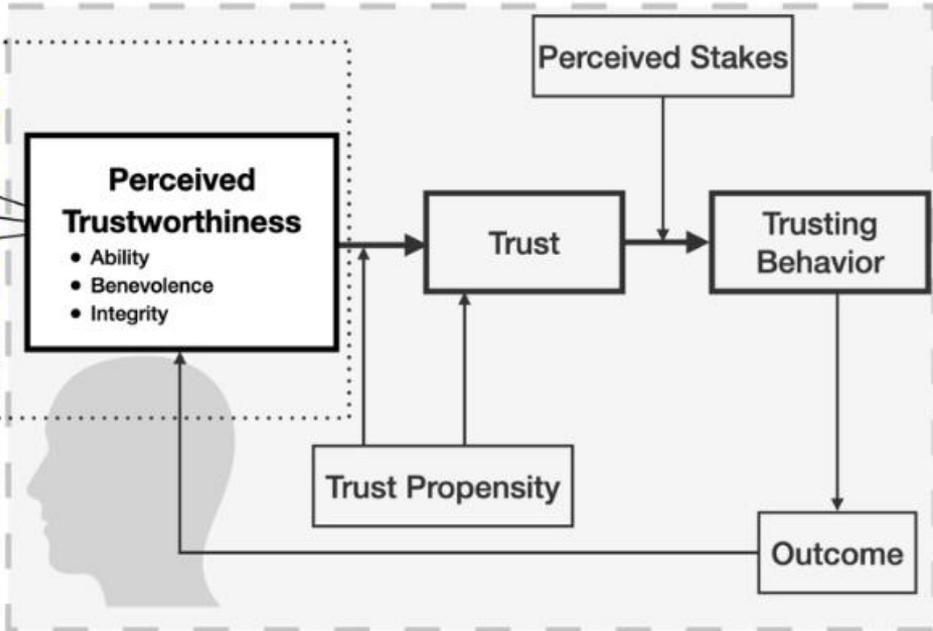
## Trustworthiness Assessment Model (TrAM)

(adapted from Schlicker et al. 2022)



## Organizational Trust Model

(adapted from Mayer et al. 1995)



# The Value of Trust

Trust is the essence which drives:

- Relationships,
- Performance,
- Innovation,
- Efficiency,
- Effectiveness,
- Results and successes of organizations, companies, government agencies, products and services.
- Reduces direct costs and transaction costs
- Reduces mistakes
- Etc.

# Reasons for growing user (B2B and B2C) demand for Digital Trust products, services, integral components (1/2)

- Geopolitical and social situations:
- Growing life and business complexity
- Growing technological complexity
- Data sharing drives ecosystems in the digital economy, data dependency, data authenticity and accuracy
- Speed of technological development and dependencies on other countries (which are not liberal democracies).
- Lack of transparency and explain ability of the technology
- Lack of automated tools to monitor regulatory implementation (AIA, Digital Service ACT, GDPR)
- Lack of efficient, effective regulations and standards that also promote innovation
- Uncertainties in data sources and data exchange

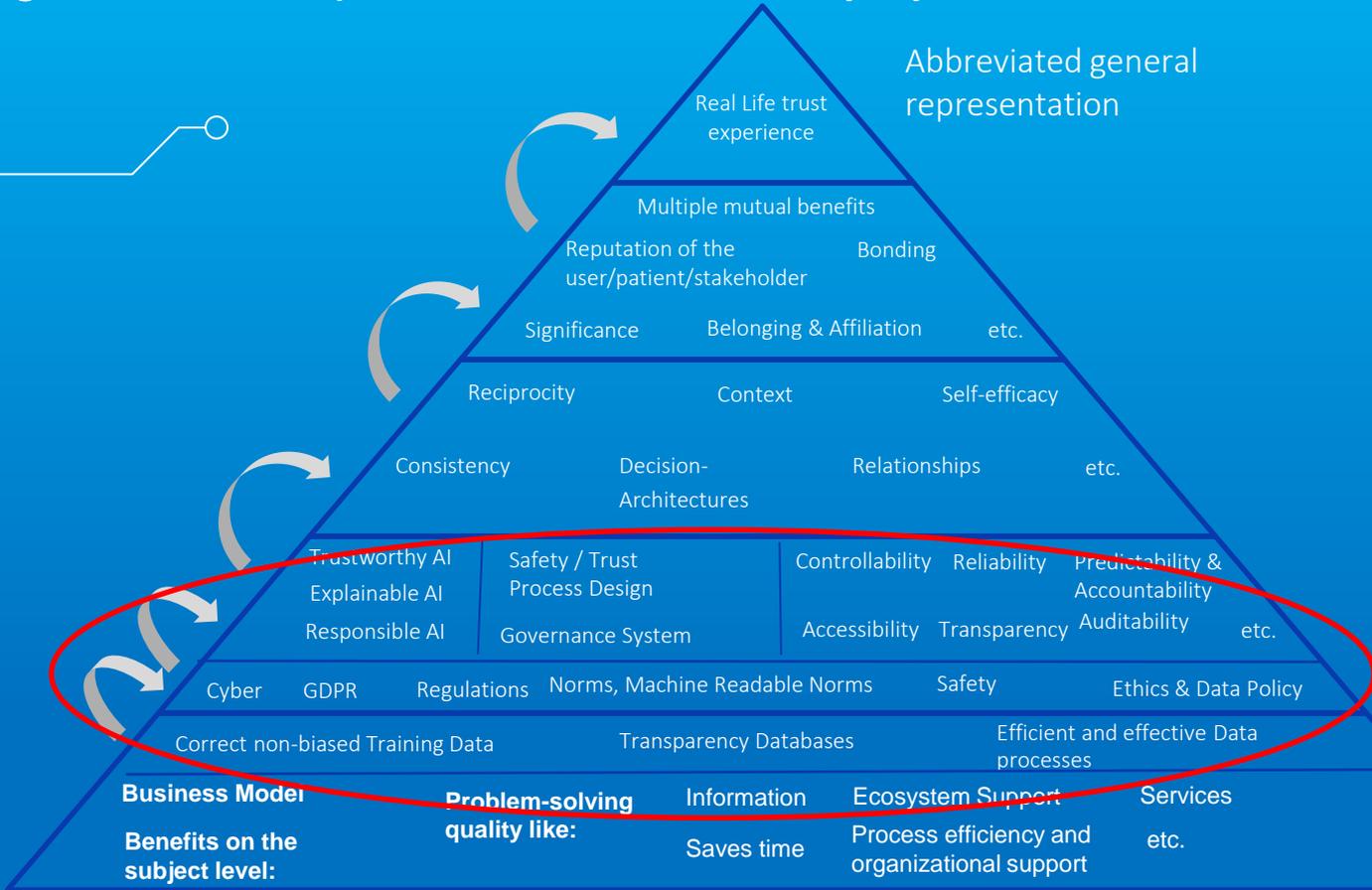
## Reasons for growing user (B2B and B2C) demand for Digital Trust products, services, integral components (2/2)

- Increase in cyber attacks
- Growing online harm (e.g., child abuse, cyberbullying).
- Misinformation, Disinformation, political opinion influencing by bots and deep fakes in e.g. social media
- Data Misuse
- Growing ethical awareness
- Increasing use of dark patterns (UX, UI, and product design features that motivate users to make choices that don't match their interests)
- Inefficient and ineffective capabilities in the private and governmental sector
- Inadequately equipped SMEs

# When it comes to AI

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- 
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- Incorrect Results
  - Biased Results
  - Manipulation
  - Physical Harm
  - Fear of losing control
  - Etc.

# Building Trust – comprehensive trustworthy system

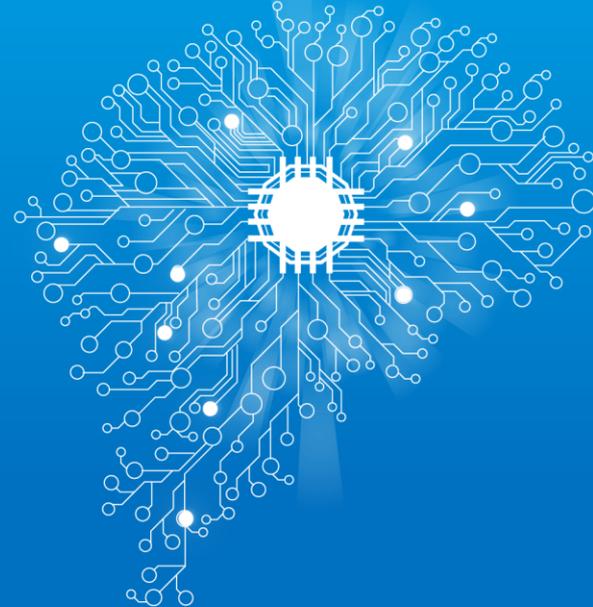




# The human Brain loves Labels and Standards



- complexity reduction
- security & safety
- Expertise and detailed knowledge is not accessible to us for various reasons.



▶ This is particularly relevant in situations where vital interests are affected.

# The effectiveness of labels and standards in particular has been scientifically analysed in the healthcare sector

For example, as early as 2006, it was recognised that information systems play an essential role in improving health outcomes and decision-making in healthcare, and standardization in this field is crucial for building an integrated health information system and achieving overall goals in healthcare systems. <sup>1</sup>

For example: Ljerka, Luić, Dubravka, Striber-Devaja, (2006), The significance of information standards for development of integrated health information system. Archive of Oncology, 14:64-66. doi: 10.2298/AOO0602064L

Quality and its reliable communication has a significant influence on consumer / user behavior.

Consumers are increasingly aware of the quality of the products and services

This awareness influences their usage / purchasing decisions

However, the benefit that activates the motivation for a purchase or usage decision must be clearly recognizable and transparent

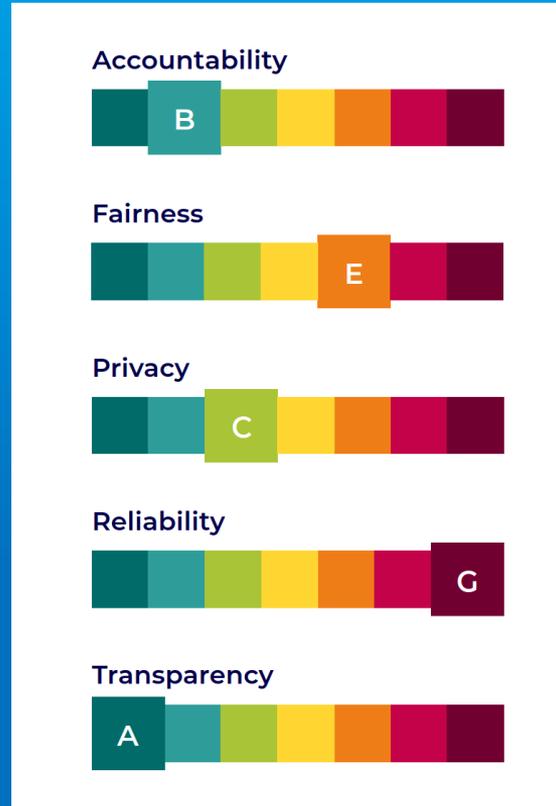
For example: B. Stoltenberg, Matthias Unfried, Vladimir Manewitsch, Better Product Labels for Better Consumer Choices 01 Apr 2022-NIM marketing intelligence review-Vol. 14, Iss: 1, pp 49-53; Sascha Kugler, Hendrik von Janda-Eble, Markenmanagement mit System, Springer, 2018, S. 138); Bang Nguyen-Viet, Understanding the Influence of Eco-label, and Green Advertising on Green Purchase Intention: The Mediating Role of Green Brand Equity, Volume 28, 2022 - Issue 2.;

David López Jiménez, Eduardo Carlos Dittmar, Jenny Patricia Vargas Portillo, The Use of Trust Seals in European and Latin American Commercial Transactions, Journal of Open Innovation: Technology, Market, and Complexity,

Building trust is important for the acceptance of innovations.  
A credible label / seal can achieve this..

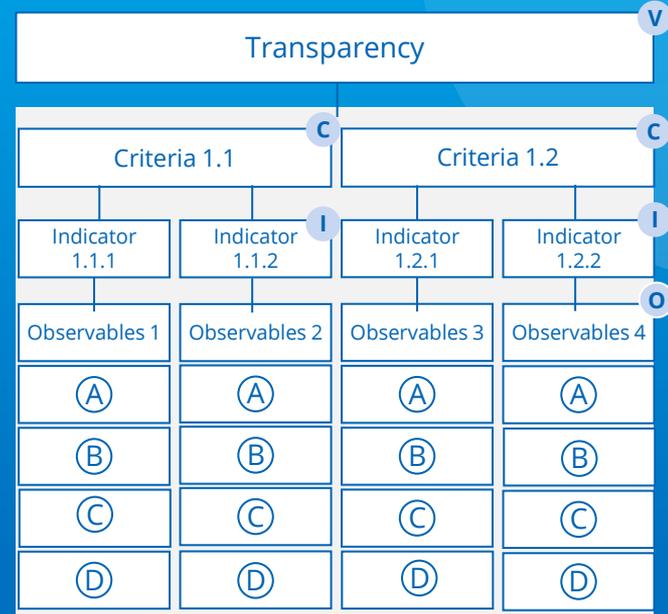
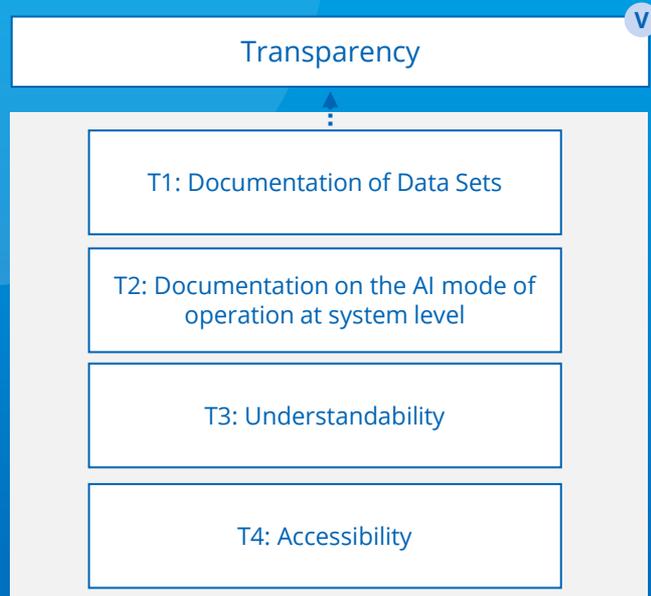
**AI TRUST**

Label VDE



# The Trust Label is based on a clear structural framework.

Standardized questionnaire VCIO (Values, Criteria, Indicators, Observables)



# We focused on joint development during the development of the Trust Label



We developed the label with these partners:

**VDE SPEC**

**AI TRUST**

**VCIO based description of systems for AI trustworthiness characterisation**

VDE SPEC 90012 V1.0 (en)

**VDE**

**BOSCH**

**SIEMENS**

TECHNISCHE UNIVERSITÄT DARMSTADT

**TUV SUD**

**SAP**

EBERHARD KARLS UNIVERSITÄT TUBINGEN  
INTERNATIONALES ZENTRUM FÜR ETHIK IN DEN WISSENSCHAFTEN (IZEW)

**BASF**  
We create chemistry

**KIT**  
Karlsruher Institut für Technologie

**iRights.Lab**

**st w** Ferdinand-Steinbeis-Institut

Digital Trust Forum

[Link 1 AI Trust Standard \(VDE SPEC 90012\)](#)

[Link 2 zum AI Trust Standard \(VDE SPEC\)](#)

T1		Documentation of data sets		
T1.1		A	B	C
Is the data's origin documented?	Established structured notations like "datasheets for datasets" are recommended here.	Yes, with <b>structured datasheets</b> , including <b>detailed</b> information on: <ul style="list-style-type: none"> <li>- data handling</li> <li>- data collector</li> <li>- data collection method</li> </ul>	Yes, with <b>structured datasheets</b> including <b>detailed</b> information on: <ul style="list-style-type: none"> <li>- data handling</li> <li>- data collector</li> <li>- data collection method</li> </ul> containing few (not all) information	Yes, information is collected on: <ul style="list-style-type: none"> <li>- data collection method</li> <li>- data handling</li> <li>- data collector</li> </ul> containing few or missing information <b>without structured datasheets</b>
T1.2		A	B	C
Are the characteristics of data sets analysed and documented?	Explorativ question. Related to R1.2 and F1.7. Characteristics of data sets are: <ul style="list-style-type: none"> <li>- fit to operational domain</li> <li>- amount of data points in relationship to the domain</li> <li>- individual or perturbed data points</li> <li>- potential for bias</li> <li>- analysis for potential proxies</li> </ul>	Yes, <b>structured</b> information about the characteristics of data sets, including <b>all</b> mentioned characteristics are provided.	Yes, <b>structured</b> information about the characteristics of data sets, including <b>all</b> mentioned characteristics, are provided <b>only some contain few or missing information.</b>	Yes, <b>structured</b> information about the characteristics of data sets are provided, <b>but not covering all mentioned characteristics</b>

# AI Act compliant, we have developed the AI Trust Label.



Easier implementation of the AI Act

Better purchasing decision



Increases the acceptance

Creates higher user quotas

Leads to higher sales figures and sales prices



Creates customer confidence

Reduces internal acceptance hurdles

Reduces internal work effort and transaction costs



Is a concrete guideline for product development



We provide technical support for implementation and updates

# The Label generates a lot of measurable values



Customers, suppliers  
and their team  
understand certain  
levels



Not bound by  
national laws

Independent of  
addressing other  
markets



Established  
visualization in the  
general population



You become part of a  
community of experts

• • • • •



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