



DEUTSCHE
GESELLSCHAFT FÜR
ZERSTÖRUNGSFREIE
PRÜFUNG e.V.

Memorandum of Understanding



Data Transparency for NDE Data Formats and
M2M and HCI Interfaces

Version 1.02

May 2020

This Memorandum of Understanding (MoU) is entered into and between the Parties listed at the end of this document.

Purpose

The purpose of this MoU is formally to record the mutual interest of the parties in promoting, furthering, and implementing data transparency for data formats and interfaces (machine to machine (M2M) and Human–computer interaction (HCI)) for Non-Destructive Evaluation and Testing (NDE & NDT) in conjunction with the requirements of Industrie 4.0.

Statements

Data Transparency

Industrie 4.0, the upcoming fourth industrial revolution, uses data correlation and evaluation to improve processes, production, design and products. To reach this goal unhindered data exchange between machines needs to be established. This allows, for example, also to reuse the data, to perform trend analyses, and enables the use of artificial intelligence. Therefore, data transparency is one of the cornerstones of Industrie 4.0 both for data formats and for interfaces. Data transparency requires

1. **Standardized open and well-documented data formats and interfaces.** Using open data formats and interfaces allows the unhindered data exchange required by Industrie 4.0. They must be well-documented to allow all parties the implementation of the data formats and interfaces (best by the availability of SDKs (software development kits)) and they should be standardized to minimize the number of data formats and interfaces which have to be implemented.
2. **Data formats and interfaces with a semantic interoperability based on standardized information models.** Semantic interoperability allows machines the interpretation of data and is therefore another key component for Industrie 4.0 data transparency. Similar to data formats and interfaces the semantic interoperability, the ontology, needs to be standardized in open and well-documented information models.
3. **Data security.** Data needs to be protected from destructive forces and from the unwanted actions of unauthorized users. Otherwise data transparency will not be possible.
4. **Data sovereignty.** Data ownership and usage rights needs to be guaranteed, in particular if data is transferred between different companies.

NDE Data Formats and Interfaces

NDE can become one of the key data providers for this fourth industrial revolution. To reach this goal data transparency needs to be established.

Therefore, the parties agree to promote, further, and implement the requirements for data transparency for data formats and interfaces (machine to machine (M2M) and Human–computer interaction (HCI)) mentioned above for Non-Destructive Evaluation and Testing (NDE & NDT). Those requirements also build the criteria to evaluate and accept additional standards if and when they emerge. However, it should be considered that a too big variety would harm the cause.

Author

| Version | Author | Position |
|---------|--------------------|---|
| 1.0 | Dr. Johannes Vrana | DGZfP Chairman of the Subcommittee Interfaces for NDE 4.0 |

Parties

The public master document shows the date, the name, and the position of the parties which have signed up to the moment. The actual signed documents will be kept on file and will not be published.

Signatory Parties

| Date | Name | Position |
|------------|-------------------------|---|
| 2020-03-23 | Dr. Johannes Vrana | CEO Vrana GmbH ICNDT Chairman SIG NDE 4.0 DGZfP Chairman of the Subcommittee Interfaces for NDE 4.0 |
| 2020-03-23 | Jens Martin | CEO Visus Industry IT GmbH |
| 2020-03-23 | Hajo Schulenburg | CEO VisiConsult |
| 2020-03-25 | Christof Reinhart | CEO Volume Graphics GmbH |
| 2020-03-30 | Daniela Engert | GMH Prüftechnik GmbH |
| 2020-04-24 | Sascha Martin | BW PLUS NDT GmbH & Co. KG – Vertrieb |
| 2020-04-27 | Prof. Dr. Bernd Valeske | Vice Director Fraunhofer IZFP DGZfP Chairman Committee NDE 4.0 |

Signature of New Party *(Please complete)*

Title, First Name, Last Name

Date

Position

Company