

DIN SPEC 91391-1:2019-04 (E)

Common Data Environments (CDE) for BIM projects - Function sets and open data exchange between platforms of different vendors - Part 1: Components and function sets of a CDE; with digital attachment

Contents

	Page
Foreword	4
Introduction.....	5
1 Scope	8
2 Normative References.....	8
3 Terms and Definitions	8
4 Modules and functional components of a CDE	14
4.1 General	14
4.2 Single Source of Information.....	15
4.3 Modular Architecture.....	16
4.4 Workflow Management.....	16
4.4.1 General	16
4.4.2 User Management.....	16
4.4.3 Monitoring.....	17
4.4.4 Workflows	17
4.5 Data Management.....	18
4.5.1 General	18
4.5.2 General Functions.....	18
4.5.3 Plans and documents	22
4.5.4 Models.....	23
4.5.5 Data Referencing and Linking.....	23
4.5.6 Open and closed Formats (open BIM/closed BIM).....	24
4.6 Administration	25
4.6.1 General	25
4.6.2 Project Administration.....	25
4.6.3 Data Sovereignty and Neutrality.....	26
4.6.4 Sharing Information in a Project.....	26
4.7 Technical Facilities and Digital Infrastructure.....	28
4.7.1 Operating Environment (Data Center)	28
4.7.2 Hosting.....	28
4.7.3 Network Connection.....	28
4.7.4 Data Security	29
4.7.5 CDE-Functions of Technical Facilities and Digital Infrastructure.....	29
5 Use Cases.....	29
5.1 General	29
5.2 BIM Processes in a Corporate Context.....	29
5.2.1 General	29
5.2.2 Example of Level of Detail at Process Level.....	30
5.3 BIM Use Cases.....	30
5.3.1 General	30
5.3.2 Model Delivery.....	32
5.3.3 Model Delivery Management.....	32
5.3.4 Validation and quality assurance	32
5.3.5 Model Coordination (Coordination of Disciplines)	33

5.3.6	Tender	34
5.3.7	Integration of Manufacturer's Data	34
5.3.8	Risk Management	35
5.3.9	Handover to Operation (Application for Operation and Maintenance UC 20)	36
5.3.10	Milestones/Data Drops	37
5.3.11	Maintenance in Facility Management	38
5.4	CDE Use Cases	39
5.4.1	General	39
5.4.2	Coordination	39
5.4.3	Model Visualization	43
5.4.4	Quality Assurance	43
5.4.5	Planning and Controlling	44
5.4.6	Integration	44
	Bibliography	45

Figures

Figure 1 — Map of standards relevant for DIN SPEC 91391	5
Figure 2 — Level-2-CDE and access to information containers via metadata. a) container holding a document, b) a model and c) a nested information container	13
Figure 3 — Level 3 CDE with access via metadata or direct access to model elements and attributes (database)	13
Figure 4 — Module structure of a CDE	15
Figure 5 — Status transitions of information containers according to DIN EN ISO 19650	21
Figure 6 — Project partners exchange information containers with different processing status. A coordinating entity (e.g. BIM coordinator) controls the state transition (Work in Progress/shared/published/archived)	22
Figure 7 — Referencing information in a DBMS (internal or external)	24
Figure 8 — Information providers and delivery in a CDE project	27
Figure 9 — Different levels of process details, from business case to CDE workflow	30

Tables

Table 1 — Aggregation Levels	12
Table 2 — Mapping between ISO 19650 and DIN SPEC 91391 states	20
Table 3 — Information status and transition according to DIN EN ISO 19650	21
Table 4 — BIM use cases [Source: Project BIM4Infra2020]	31