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BIM Properties & Exports

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Are you an attendee in a DigiPara Liftdesigner online training module?

We recommend to print these out in advance so that you have a handout for your own editing

and for your notes during your training.

Since DigiPara can not provide software licenses for CAD programs like SolidWorks, Creo, Inventor or AutoCad on the remote training machines, attendees will follow the feature demonstration by the trainer. Attendees can also practice the training samples, but the related CAD software must be installed on the attendees machine.

Please contact DigiPara AG some days in front of the training, to obtain a free DigiPara Liftdesigner software license, to be installed on the trainees local workstation. Installing other CAD programs as mentioned above needs also to be done by the attendee upfront.



C1.1 BIM (Building Information Modeling)

- What is BIM?
- BIM Goals
- BIM Standards

C1.2 LOD-Level & design phases (according to German VDI)

- Phase A LOD 100
- Phase B LOD 200
- Phase C LOD 300



C1.3 LOD & LOI

- General information: LOD (Level of Development)
- General information: LOI (Level of Information)
- Setting options for BIM components
- LDBIM LOD sheet templates
- Setting options for view frames



C1.4 Create own BIM properties

- Docking windows for BIM properties
- Project-related setting options
- Create in the database table and distribute the data

C1.5 BIM file export

- Coordinate settings
- IFC exports and LDBIM exports
- RFA exports



C1.6 Notes on Autodesk[®] Revit[®]

- DigiPara Elevatorarchitect & Load LDBIM Tool
- IFC and the creation of families

C1.7 Practice

BIM values & IFC exports

C1.8 Summary

Custom Q&A's & further information



BIM (Building Information Modeling)





What is BIM? C1.1 BIM (BUILDING INFORMATION MODELING)

Requirements for the delivery of a BIM model



"Please send a BIM Model"

BIM applications C1.1 BIM (BUILDING INFORMATION MODELING)

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Closed BIM

 Collaboration with *product-specific* standards and workflows

Open BIM

 Collaboration with *manufacturer-neutral* standards and workflows

Example – Little closed:

- Architect works on the digital building model with his own specialist program but does not share the resulting files with the parties involved.
- Example Big closed:
 - The architect and engineer work with the same specialist program, so there is no need to exchange information about neutral formats.

Example – Little open:

 Architect works with his own specialist program on the digital building model but provides his client with the data as an IFC model.

• Example – Big open:

 The architect and engineer work with their own specialist program. The data is shared transparently in the process via neutral exchange formats (IFC).

BIM and "digital twin" C1.1 BIM (BUILDING INFORMATION MODELING)

Open BIM vs. Closed BIM

- Closed BIM
 - closed stand-alone solutions
 - in-house, software constrains
 - no manufacturer-neutral tender
 - + full information content
 - + preliminary coordination rather low
- Data exchange
 - not manufacturer-neutral
 - e.g. .dwg, .rvt, .prt, etc.



closed BIM

BIM and "digital twin" C1.1 BIM (BUILDING INFORMATION MODELING)

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Open BIM vs. Closed BIM

- Open BIM
 - + open BIM integration, neutral format
 - + manufacturer-neutral tender
 - + free choice of software
 - preliminary agreement on data type, data unit
 - not yet standardized / certified
- Data exchange
 - manufacturer-neutral
 - e.g. .ifc, .bcf (buildingSMART)



open BIM

BIM: Building Information Modeling

C1.1 BIM (BUILDING INFORMATION MODELING)

Enables the use of model data throughout the entire life cycle (and beyond)

- BIM is a scalable method that covers a wide range of use cases, e.g.
 - Visualization of planning and construction
 - Linking time and costs with planning
 - Detection of collisions between trades

planning evolution reconstruction building management

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BIM: Building Information Modeling

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C1.1 BIM (BUILDING INFORMATION MODELING)

BIM is a process

 Plan, Design, Build and Manage the building

With BIM all involved parties work in one virtual digital building model, e.g.

- architects, builders
- elevator companies
- facility managers



Source: BIM guideline for Germany, Research initiative: ZukunftBAU

BIM: Building Information Modeling

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C1.1 BIM (BUILDING INFORMATION MODELING)

BIM covers all life cycle phases of buildings

design -> construction -> operational phase -> deconstruction (wrecking)



Source: http://shop.bsigroup.com/navigate-by/pas/pas-1192-22013/

What is BIM? C1.1 BIM (BUILDING INFORMATION MODELING)

"It's all about Assets" - "system asset"

• The elevator is an asset in the building

Asset Information Model (AIM) besteht aus:

- Documentation (information for elevator operators)
- Non-graphical data (e.g. energie data)
- Graphical 3D model





What is BIM? C1.1 BIM (BUILDING INFORMATION MODELING)

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B – Building

Scope: Buildings

I – Information

- Information, Content
- Structured and standardized (ideally)
- Linking of different information creats added value

M – Modeling

- Modeling
- Model creation, LOD/LOI/LOG
- Method (Collaboration)
- Management (Communikation)



Summary:

Consistent use of model data over the entire life cycle from initial preliminary planning to deconstruction

- BIM refers to a cooperative method
 - Information and data relevant to the life cycle are consistently recorded, managed and exchanged or transferred in transparent communication.

Goals:

- Planing security
- Improved communication and interface coordination
- Increased transparency through traceability
- Increased schedule and cost certainty
- Improved integration of users and operators

Source: planen bauen 4.0

BIM Standards - Foundation of Cooperative, Trustworthy, Digital Collaboration

- Collaborating together requires a foundation: uniform, practical, and reliable standards, meaning norms, guidelines, directives, and templates that all stakeholders know and apply.
- A central aspect of the BIM strategy is the development of system- and product-neutral standards and data foundations. They aim to enable the implementation of projects with open data formats and secure lossless data transfer in the long term.



Source: www.bimdeutschland

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There are various standards













C1.2

LOD-Level & Design phasen

(according to German VDI)





Design phases A, B and C





Phase A – LOD 100

C1.2 LOD-LEVEL & DESIGN PHASES (ACCORDING TO VDI)



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A building is being planned







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A building in a rough planning stage

- Utilization
- Building cubature
- Plot utilization





Höhe 12,80 m x 0,4 = 5,12 m Abstandsfläche

Höhe 9,80 m x 0,4 = 3,92 m Abstandsfläche



	BGF / BRI Berechnung							
	Baukörper		Nutzung	BGF	BRI			
V	Variante 03.01							
	BK 01	UG	Keller	400	1.490			
	BK 01	EG	Gewerbe	220	869			
	BK 01	EG	Wohnen	179	527			
	BK 01	1. OG	Wohnen	400	1.175			
	BK 01	2. OG	Wohnen	400	1.175			
	BK 01	3. OG	Wohnen	400	1.215			

1.999 m² 6.451 m³

Area and volume calculations

A building in a rough planning stage

- Requirements
- Knowledge
- Information



Elevator symbol (from VDI) is planned in the building

▼ E Klassifizierung und Eigenschaften							
	KLASSIFIZIERUNGEN						
	ARCHICAD Klassifizierung - 23	Aufzug					
•	ID UND KATEGORIEN						
F	UMBAU						
•	Allgemeine Werte						
•	Produktinformationen						
*	IFC-EIGENSCHAFTEN						
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	ARCHICAD IFC ID	3DxSrskHjAqgfSyjSZ2	Thist attributes.				
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	Name (Attribute)	Aufzug 01					
	Tag (Attribute)	CDEDCD76-B91B-4AD	requirements				
	PredefinedType (Attribute)	ELEVATOR					
	RequiredElevatorUse (VDI2552_11_5_RequirementsMandatory)	Personenbeförderung					
	RequiredMRLocation (VDI2552_11_5_RequirementsMandatory)	Maschinenraumlos					
	RequiredStopsFront (VDI2552_11_5_RequirementsMandatory)	0; -2.94					
	RequiredStopsLeft (VDI2552_11_5_RequirementsMandatory)						
	RequiredStopsRear (VDI2552_11_5_RequirementsMandatory)	1; 3.94; 6.88; 9.82					
	RequiredStopsRight (VDI2552_11_5_RequirementsMandatory)						
	RequiredBarrierFree (VDI2552_11_5_RequirementsOptional)	TRUE					
	RequiredCapacityWeightMin (VDI2552_11_5_RequirementsOptional)	800,00					
	RequiredRatedSpeedMin (VDI2552_11_5_RequirementsOptional)	0,00					
		IFC-Eigenschaften ven	walten				

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Architecture provides building model including the elevator symbol





BIMcollab ZOOM (Gratis Version): MFH mit Gewerbe Phase A Objektplanung LOD 100 2022-04-01 13-15

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ø

VT consultant/manufacturer receives input for elevator planning

- receives the IFC of the building
- read out and evaluate the contained VDI data (basic requirements: payload 800kg)

BIMcollab ZOOM

BIMVision

(IFC Viewer)



Phase A – LOD 100 c1.2 lod-level & design phases (according to vdi)



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VT consultant/manufacturer (red) plans the elevator model in LOD 100

 Based on the information in the IFC files received







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VT consultant/manufacturer (red) checks his model

- Model consists of more than just geometry
- BIM properties are also transferred
 - VDI specifies which information should be transferred to the architect





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Architecture receives elevator models in LOD 100





Phase B – LOD 200

C1.2 LOD-LEVEL & DESIGN PHASES (ACCORDING TO VDI)



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Architecture plans LOD 200 buildings

• with the received BIM models of the elevator



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Architecture plans LOD 200 buildings

 further planning (staircase) taking into account the BIM models of both elevator companies






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Architecture plans LOD 200 buildings

- neutral shaft
 - both elevator variant possible







Architecture plans LOD 200 buildings

neutral shaft





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Architecture plans LOD 200 buildings

- neutral shaft
 - adjusting the shaft head and pit





Architecture plans LOD 200 buildings

- neutral shaft
 - adjusting the shaft head and pit for both elevator variants





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Architecture plans LOD 200 buildings

completed pre-planning



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Architecture plans LOD 200 buildings

Planning of the openings / opening proposals are created

¥	ID UND KATEGORIEN		
Þ	UMBAU		
•	Allgemeine Werte	Opening proposa	als are
•	Produktinformationen	planned larger in t	the first
•	Schlitze und Durchbrüche	ctop	
*	IFC-EIGENSCHAFTEN	step	
	IFC Typ		IfcBuildingElementProxy
	ARCHICAD IFC ID		2DuVILA9H6_QOIgL\$DPxBp
	Globalld (Attribute)	-	
	Name (Attribute)		Öffnungsvorschlag
	Tag (Attribute)		8DE1F495-2894-46F9-A62F-A95FCD67B2F3
	PredefinedType (Attribute)		PROVISIONFORVOID
	Reference (Pset_BuildingElementPr	roxyCommon)	ELEVATORDOOR
	ReferredTransportElementName (V	DI2552_11_5_RequirementsMand	Aufzug 01
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	RequiredStopServiceSide (VDI2552	_11_5_RequirementsMandatory)	1
	- • 9		IFC-Eigenschaften verwalten





Architecture plans LOD 200 buildings

Export of the building model





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Architecture provides building model



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VT consultant/manufacturer receive input for the elevator planning process





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VT consultant/manufacturer (blue) plans the elevator model in LOD 200

 related to the requirements of the architecture







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VT consultant / manufacturer (blue) checks his model

 in the building export of the architecture

CONSULTANTS

ANUFACTURER

BLUF





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Architecture receives elevator models in LOD 200



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Architecture receives elevator models in LOD 200

- Check if openings fit
- Collision check





Phase B – LOD 300

C1.2 LOD-LEVEL & DESIGN PHASES (ACCORDING TO VDI)

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Architecture provides the chosen manufacturer with a customized building model



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Architecture receives elevator model LOD 300



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Collision check





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C1.3

LOD & LOI





✓ General information: LOD & LOI

General information C1.3 LOD & LOI

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Level of Development



- How detailed must the model be and at which point in time?
- Consisting of:

LOG – Level of Geometry

- Which components or individual parts are relevant and need to be displayed?
- How detailed must the individual components be represented? (number of polygons)

LOI – Level of Information

- Which information needs to be integrated and which does not? Specified in the EIR document (Employer Information Requirements)
- Relevant information with an assignment to a planning phase

General information C1.3 LOD & LOI

DigiPara Liftdesigner provides 3D elevator models for different LOD levels

LOD LOD LOD LOD LOD LOD LOD LOD 100 200 300 350 400 500 MAX 00 LOD LOD LOD LOD LOD LOD LOD 00 200 300 350 400 500 MAX OD LOD LOD LOD LOD LOD LOD LOD LOD 100 200 300 350 400 500 MAX LOD LOD LOD LOD LOD LOD LOD 100 200 300 350 400 500 MAX LOD 200 LOD 300 LOD 350 LOD 100 approximate rrecise conceptual geometry geometry LOD 500 LOD MAX LOD 400 actual state Production

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General information C1.3 LOD & LOI

DigiPara Liftdesigner 3D BIM library

LOD - Level of Development

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May 23, 2024

- Manufacturers provide elevator components in LOD 100, 200, 300, ... MAX via the DigiPara Liftdesigner Cloud
- Protection of intellectual property
 - through automatic simplification of the components







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General information C1.3 LOD & LOI

Recommendation for the use of 3D CAD models in the DigiPara Liftdesigner project

 Simplification of geometries and reduction of polygons from which the body of a component is composed.

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DP-SW RB01 0000 00. [30K Polygonen]	✓ Misc			30 polygons
 Simple Bracket. Standard. [30K Polygonen] 933_M12x30_PPGT-1. [3K Polygonen] 933_M12x30_PPGT-2. [3K Polygonen] 933_M12x30_PPGT-3. [3K Polygonen] 933_M12x30_PPGT-4. [3K Polygonen] 933_M8x20_PPGT-4. [3K Polygonen] 	Occurrence Enabled Name This Object belongs to Product O Is a Characteristic Point Enabled LOD 100 Display Mode	Parent ptio No Yes by Parent		
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	Result LOD 500 Display Mode LOD MAX Display Mode Result LOD MAX Display Mode	by Parent		CAD Models &

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General information

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BIM Standard (Germany): VDI 2552.11 Page 5

 DigiPara AG is part of the VDI working group

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atio ass = LC	on c Soc)D	on t iate	ctionPlans the ExistingBuil ed Behaviourin WillfulDest EN81_72_FirefighterE	dungs CaseOfFire uction evator	Brandschutzkonzepte EN81-21 konform bestehende Gebäude EN81-73 konform Verhalten im Brandfall EN81-71 konform mutwillige Zerstörung EN81-72 konform Feuerwehraufzug EN81-72 konform Feuerwehraufzug	b36f2065-f0cf-46ac-9d32-b14523771372 IfcBoolean 3505c537-59bd-42ba-be2e-54292743641f IfcBoolean 8a57d851-778-4651-89aa-c047add86af EN81-21 IfcBoolean b4833551-1004-4eb8-8d64-8c5856659e6f EN81-73 IfcBoolean 879bf0db-734f-450e-9bac-46c5a463309c EN81-71 IfcBoolean 24a8e9b1-378a-4b80-a99d-59f537d794ft EN81-72 IfcBoolean	ja/nein 6 ja/nein 7 ja/nein f ja/nein ja/nein ja/nein
natio e ass = LC	DD DD DD 34 35 36 37 38 39 40	on t iate	ctionPlans the ExistingBuil Behaviourin WillfulDest EN81_72_FirefighterE EN81_77_Earthquake	dungs CaseOfFire uction evator	EN81-71 konform Feuerwehraufzug EN81-77 konform Erdbeben	b36f2065-f0cf-46ac-9d32-b14523771372 ifcBoolean 3505c537-59bd-42ba-be2e-54292743641 ifcBoolean 8a57d851-7778-4651-89aa-c047add86af EN81-21 ifcBoolean b4833551-1004-4eb8-8d64-8c5856659e6f EN81-73 ifcBoolean 879bf0db-734f-450e-9bac-46c5a463309c EN81-71 ifcBoolean 24a8e9b1-378a-4b80-a99d-59f537d794ft EN81-72 ifcBoolean 24a8e9b1-378a-4b80-a99d-59f537d794ft EN81-72 ifcBoolean d703(18-9dbb-48e9-989b-897ab29c33b9	ja/nein ja/nein ja/nein ja/nein ja/nein ja/nein
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atio ass = LC	On C 5 OC) D 34 35 36 37 38 39 40 41 42	on t iate	ctionPlans the ExistingBuil BehaviourIr WillfulDest EN81_72_FirefighterE EN81_77_Earthquake	dungs CaseOfFire uction evator	EN81-21 konform bestehende Gebäude EN81-21 konform Verhalten im Brandfall EN81-73 konform Verhalten im Brandfall EN81-71 konform mutwillige Zerstörung EN81-72 konform Feuerwehraufzug EN81-72 konform Feuerwehraufzug	b36f2065-f0cf-46ac-9d32-b14523771372 IfcBoolean 3505c537-59bd-42ba-be2e-542927436411 IfcBoolean 8a57d851-778-4651-89aa-c047add86af7 EN81-21 IfcBoolean b4833551-1004-4eb8-8d64-8c5856659e6f EN81-73 IfcBoolean 879bf0db-734f-450e-9bac-46c5a463309c EN81-71 IfcBoolean 24a8e9b1-378a-4b80-a99d-59f537d794ft EN81-72 IfcBoolean 24a8e9b1-378a-4b80-a99d-59f537d794ft EN81-72 IfcBoolean d703c18-9dbb-48e9-989b-897ab29c33b9 EN81-77	ja/nein ja/nein ja/nein ja/nein ja/nein ja/nein ja/nein ja/nein
natio e ass = LC	0 n c 60C) D	on t iate	ctionPlans the ExistingBuil Behaviourin WillfulDest EN81_72_FirefighterE EN81_77_Earthquake: EN81_70_ElevatorForl	dungs CaseOfFire uction evator ; eopleWithReducedMobility	Brandschutzkonzepte EN81-21 konform bestehende Gebäude EN81-73 konform Verhalten im Brandfall EN81-73 konform mutwillige Zerstörung EN81-71 konform Feuerwehraufzug EN81-72 konform Feuerwehraufzug EN81-77 konform Erdbeben EN81-70 konform Zugänglichkeit von Aufz	b36f2065-f0cf-46ac-9d32-b14523771372 ifcBoolean 3505c537-59bd-42ba-be2e-542927436411 ifcBoolean 8a57d851-7778-4651-89aa-c047add86af. EN81-21 ifcBoolean b4833551-1004-4eb8-8d64-8c5856659e6f EN81-73 ifcBoolean 879bf0db-734f-450e-9bac-46c5a463309c EN81-73 ifcBoolean 24a8e901-3784-450e-9bac-46c5a463309f EN81-72 ifcBoolean 24a8e91-378a-4b80-a99d-59f537d794ft EN81-72 ifcBoolean d703c18-9dbb-48e9-989b-897ab29c33b9 EN81-77 itügen für	ja/nein ja/nein 7 ja/nein f ja/nein ja/nein ja/nein
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atio ass = LC	0 n c 50 c) D 34 35 36 37 38 39 40 41 42 43 44 44	on t iate	EN81_77_ElevatorForf	dungs CaseOfFire evator eopleWithReducedMobility	Brandschutzkonzepte EN81-21 konform bestehende Gebäude EN81-73 konform Verhalten im Brandfall EN81-73 konform mutwillige Zerstörung EN81-71 konform Feuerwehraufzug EN81-72 konform Erdbeben EN81-77 konform Erdbeben EN81-70 konform Zugänglichkeit von Aufz Pers. mit Behinderung	b36f2065-f0cf-46ac-9d32-b14523771372 ifcBoolean 3505c537-59bd-42ba-be2e-54292743641 ifcBoolean 8a57d851-7778-4651-89aa-c047add86af7 EN81-21 ifcBoolean b4833551-1004-4eb8-8d64-8c5856659e6f EN81-73 ifcBoolean 879bF0db-734f-450e-9bac-46c5a463309c EN81-71 ifcBoolean 24a8e9b1-378a-4b80-a99d-59f537d794ft EN81-72 ifcBoolean d703c18-9dbb-48e9-989b-897ab29c33b9 EN81-77 ifcBoolean d703c18-9dbb-48e9-989b-897ab29c33b9 EN81-77 ifcBoolean d703c18-9dbb-48e9-989b-897ab29c33b9 EN81-77	ja/nein 7 ja/nein 7 ja/nein ja/nein ja/nein ja/nein ja/nein ja/nein 2

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C1.3 LOD & LOI

DigiPara Liftdesigner offers a prepared set of LOD drawing sheets

standard data pool path:
 C:\ProgramData\DigiPara\20**\dcc\DataPool\sheets



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DigiPara Liftdesigner offers a prepared set of LOD drawing sheets

- Breadcrumb Document. Sheets. Favorites Options Properties .ock Update Sheet fra Representation Display as [2500] Drawing Render Mode [2501] Camera P Projection Camera position) Camera position Camera position 2 LOD 100, 200, 300 ... MAX Camera target X Camera target Y Camera target Z Camera target Wi **Example: LDBIM-LOD-Sheet** Camera target Wi Camera target He Representation Key: KEY_FRAME_DE 🔻 🗑 🖌 🕨 🕨 🗡 Compone... 🖷 A Work area LDBIM-LOD200-Sheet LDBIM-LOD-Sheet
- whose specifically defined view frames can be used directly for the 3D BIM export

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C1.3 LOD & LOI

General information

- The LOD settings for the entire elevator project can be defined under the view frame tab.
 - Further setting options for the individual view frames follow in the next training step.

A

Active Componen

Annotation

Selection



Setting options for view frames

Preparation steps C1.3 LOD & LOI

Creating an elevator project

- 5 floors
- Typical floor to floor distance 3500 mm
 - Consider travel no
 - Create building floor levels no
- 13 persons / 1000 kg, 1 m/s
- Traction elevator 1:1
- Machine room
 - top
- Car roping
 - direct
 - without Counterweight safety gear
- Counterweight roping
 - direct
 - Counterweight left

- Sheet Templates
 - LDBIM-LOD100, 200, 300-Sheet
 - LDBIM-LOD-Sheet
- Car size
 - Car width: 1600 mm
 - Car depth: 1400 mm
- Save the project under the following file name: LDTrainingSampleC1_01.ld3

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Setting options for view frames C1.3 LOD & LOI

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General information

• The current content of the selected view is always used for the BIM export.



Setting options for view frames

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LOD view frame settings via the Properties docking window: Level of Development

- Representation
 - LOD level settings for the selected view frame

- Display as
 - shows the elevator model in other display variants for contro and overview purposes
 - this does not affect the export itself

Available in drawing sheets that contain BIM or LOD in the sheet name.

perties		џ	×
k Update Sheet frame 2 [LdvFram	ne2.]		
[2001] Level of Developme	nt (LOD)		^
Representation	LOD 200	\sim	
Display as	Default (by Sheet)		
[2500] Drawing Style	LOD 100		
Render Mode	LOD 200		
[2501] Camera Projection	LOD 300		
Projection	LOD 350		
Camera position X	LOD 400		
Camera position Y	LOD 500		
Camera position Z	LOD Max		
	perties k Update Sheet frame 2 [LdvFran [2001] Level of Developme Representation Display as [2500] Drawing Style Render Mode [2501] [2501] Camera Projection Projection Camera position X Camera position Z Position Z	perties Sheet frame 2 [LdvFrame2.] [2001] Level of Development (LOD) Representation LOD 200 Display as Default (by Sheet) [2500] Drawing Style LOD 100 Render Mode LOD 200 [2501] Camera Projection LOD 300 Projection LOD 350 Camera position X LOD 400 Camera position Y LOD 500 Camera position Z LOD Max	perties ₽ k Update Sheet frame 2 [LdvFrame2.] I2001] Level of Development (LOD) Representation LOD 200 Display as Default (by Sheet) [2500] Drawing Style LOD 100 Render Mode LOD 200 [2501] Camera Projection LOD 300 Projection LOD 350 Camera position X LOD 400 Camera position Z LOD 500 LOD Max

	Pro	perties			д	×
rol	Loc	k Update	Sheet frame 2 [LdvFrar	me2.]		
	~	[2001] L	evel of Developme	ent (LOD)		^
		Represer	ntation	LOD 200		
	_	Display a	is	BIM Exports	\sim	
	~	[2500] [Drawing Style	Regular Frame (default)		
		Render M	Node	Design Mode		
	~	[2501] (Camera Projection	Print Mode		
		Projectio	n	BIM Exports		
		Camera	position X	0		1

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Let's take a break!

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Create own BIM properties



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Docking windows for BIM properties

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C1.4 CREATE OWN BIM PROPERTIES

Component BIM Properties



- DigiPara[®] BIM Values
 - preset and are <u>always</u> exported as well
- Autodesk[®] Revit[®] BIM Value
 - switched on by default for new projects

nponent BIM Properties		1
Shaft0.Entries1.E0.ShaftDoor. BIM Properties:	onent	
BIM Values		
DigiPara®		
▲ DigiPara		
DigiPara.LDXType	LDXLandingDoor	¹ M
DigiPara.RevitTargetName	ShaftDoor	144.
DigiPara.lfcExportAs	lfcDoor	141.
DigiPara.lfcExportType	ELEVATOR	141
DigiPara.lfcParent	FloorLevel.	141.
DigiPara.lfcFills	Parent.Opening.Hole0.	141.
DigiPara. IfcAssignsTo	Me.Shaft.	141.
SBB BIM - Beförderungsanlage	2	
Autodesk [®] Revit [®]		
Revit Standard Parameter		
Assembly Code	D1010	141.
Description	0	141
Manufacturer	Common components	IN.
Model	S2L	1 May
OmniClass Number	23.23.11.11.21.11	1 May
Type Comments		
Povit Standard Parameter fo	r IEC Export (Povit 2023 and	highor)

Project BIM Settings
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C1.4 CREATE OWN BIM PROPERTIES

Component BIM Properties



- VDI 2552 Page 11.5 Properties
 - The VDI 2552 module must be part of the data pool.



Component BIM Properties	џ	×
Shaft0.Entries1.E0.ShaftDoor.		
BIM Properties:		
BIM Values		
▶ DigiPara®		
SBB BIM - Beförderungsanlage		
Autodesk® Revit®		
VDI 2552 Page 11.5 Properties		
VDI2552_11_5_Doors		
DoorClearOpeningHeight 2000		
DoorClearOpeningWidth 900		
Create Revit families based on (for LDXLandingDoor):		
By Document Default (Metric Generic Model)		₩

Project BIM Settings

VDI 2552 DigiPara Liftdesigner module

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C1.4 CREATE OWN BIM PROPERTIES

VDI 2552 Page 11.5 BIM Properties

• The corresponding software extension can be downloaded via the DigiPara Liftdesigner Cloud.



DigiPara Liftdesigner Fundamentals

VDI 2552 for BIM Properties

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C1.4 CREATE OWN BIM PROPERTIES

General information

• VDI 2552 contains an overview with the corresponding definitions of LOD 100 - LOD 300

	vdi File	i 2552 Rev 2021 e Edit View Inse	☆ 🖸 ert Forma	⊘ t Data Tools Exter	nsions He	əlp							
٩	Mer	nus 5 2 E	5 100	% • € % .0,	.00 123	□ Defaul • □ - 11 + □ B		• PI • A • G> E II 7 II •	Σ				
F25		- jsc VDI2552_11_5	5_Electricity										
	A	В	С	D	E	F	G	Н	1				
1													
2		Object	LOD	IfcEntityType	LOI	Parameterset	Parameter	Deutsche Übersetzung	lfcType	Guid			
3		-			-								
4		Aufzugssystem	100	IfcBuildingSystem	100	Pset_ManufacturerTypeInformation	ModelReference						
5		_	200	DradafinadTuna		Pset_ManufacturerTypeInformation	Artic						
6		-	500	TRANSPORT		Pset_ManufacturerTypeInformation							
7		-				Pset_TransportElementCommon			16.7	orf-hci			
0		-				VDI2552_11_5_Common	Eleva	Autzugnutzung	ifclext	2518001			
9				1	VDI2552_11_5_Common	RatedSpeed	Renngeschwindigkeit	ITCREal	e92508				
10						VDI2552_11_5_Common	Iravei	Forderhone	inceositiveLengthivieasure	8210162			
17		-			200	VDI2EE2 11 E Common	NumberOfficers	Haltastallananzahl	If Decitive Integer	hasfao			
13		-			200	VDI2552_11_5_Common	FireProtectionPlant	Brandschutzkonzente	IfcRoolean	2505c5			
14						VDI2552_11_5_Common	EN91 21 ExistingBuildungs	EN81-21 konform bestehende Gehäude	IfcBoolean	9557d9			
15						VDI2552_11_5_Common	EN81_72 RehaviourInCaseOfEire	EN81-73 konform Verhalten im Brandfall	IfcBoolean	649225			
16						VDI2552_11_5_Common	ENS1_75_DENAVIOURICASEON ITE	EN81-71 konform mutwillige Zerstörung	IfcBoolean	879hf0			
17						VDI2552_11_5_Common	EN81	EN81-72 konform Feuerwehraufzug	IfcBoolean	243869			
18						VDI2552_11_5_Common		EN81-77 konform Erdbeben	IfcBoolean	d703c1			
19								EN81-70 konform Zugänglichkeit von Aufzügen	IfcBoolean				
						VDI2552_11_5_Common	EN81_/U_ElevatorForPeoplevvitnReducedivid	b für Pers. mit Behinderung		39d0f41			
20		-				VDI2552 11 5 Common	EN81 58 DIN18090 SpecificNationalFireResi	EN81-58 / DIN 18090 landesspezifische st Feuerwiderstandsklasse	IfcBoolean	4340a3			
21						VDI2552 11 5 Common	AccordingToOtherStandards	weitere Normenkonformität	IfcText	781962			
22						VDI2552 11 5 Common	Headroom	Schachtkopfhöhe	IfcPositiveLengthMeasure	531611			
23						VDI2552 11 5 Common	Pitdepth	Schachtgrubentiefe	IfcPositiveLengthMeasure	6f0082			
24													
25					300	VDI2552 11 5 Electricity	Main	Hauptzuleitung: Anschlussart	IfcText	ed388c			
26						VDI2552 11 5 Electricity	Main	Hauptzuleitung: Spannung der Netzversorgung	IfcReal	9db0f7			
27						VDI2552 11 5 Electricity		Hauptzuleitung: Typ der Spannungsversorgung	IfcText	b9c420			
28		-							VDI2552 11 5 Electricity		Hauptzuleitung: Frequenz der	IfcReal	43453ft
29						VDI2552_11_5_Electricity	MainPowerSupply_PowerConsumption	Hauptzuleitung: Elektrische Leitungsaufnahme	IfcReal	eb6f18			

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C1.4 CREATE OWN BIM PROPERTIES

Export settings for Revit[®] families

- define the template that is used to create the family for the BIM export
 - Metric Generic Model (recommended)
 - sectional view of imported models
 - Metric Specialty Equipment
 - no section display recommended
 - for escalator exports

Options	
Component BIM Properties	Р
LDXDocument.	
BIM Properties:	
• by Type: LDXDocument	
 Disable for selected component 	
BIM Values	
DigiPara ®	
 Autodask@ Douit@ 	
Autodesk® Kevit®	
Autodesk® Revit®	
Create Revit families based on (for LDXDocument):	
Create Revit families based on (for LDXDocument): By Document Default (Metric Generic Model)	
 P Autodesk © Revit © Create Revit families based on (for LDXDocument): By Document Default (Metric Generic Model) Document Default: 	
Autodesk® Revit® Create Revit families based on (for LDXDocument): By Document Default (Metric Generic Model) Document Default: Metric Generic Model	
Autodesk® Revit® Create Revit families based on (for LDXDocument): By Document Default (Metric Generic Model) Document Default: Metric Generic Model Metric Generic Model	
Autodesk® Revit® Create Revit families based on (for LDXDocument): By Document Default (Metric Generic Model) Document Default: Metric Generic Model Metric Generic Model Metric Specialty Equipment	

Project BIM Settings

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C1.4 CREATE OWN BIM PROPERTIES

Deactivate BIM properties for selected components

are not taken into account for export







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C1.4 CREATE OWN BIM PROPERTIES

Project BIM Settings

- selecting predefined BIM standards for BIM export
- creating own project-specific
 BIM parameter definitions

DigiPara Liftdesigner 2024 - Project BIM Settings		N.			R	1
 Select BIM Properties for this project VDI 2552 Page 11.5 Properties SBB BIM - Beförderungsanlage Autodesk® Revit® IFC4 Standard Properties BIMobject 		Project BIM Settings	Component BIM Properties BIM Export	IFC IFC	RFA	LDBIN
 COBie UK Additional Project Specific BIM Parame Add new Select component types to have BII 	eter Defir M Prope	nition rties				
 Typical Important Components User Component Strutural Elements Electrical Components Car Entrance Mechanical M/R components Pit Elements Shaft Installation Materials Shaft Building Elements 						
Show Component BIM Properties Window	Cance	OK				

C1.4 CREATE OWN BIM PROPERTIES

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Selection activated availability of BIM values on the component

• For example: COBie - UK Standard



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C1.4 CREATE OWN BIM PROPERTIES

Project BIM Settings

selecting component types

DigiPara Liftdesigner 2024 - Project BIM Settings

VDI 2552 Page 11.5 Properties	4
SBB BIM - Beförderungsanlage	
Autodesk® Revit®	
IFC4 Standard Properties	
BIMobject	
COBie UK	
Additional Project Specific BIM Parameter Definition	
Add new	
Select component types to have BIM Properties	
Typical Important Components	
User Component	
Strutural Elements	
Electrical Components	
Car	
Entrance	
Mechanical M/R components	
Pit Elements	
Shaft Installation Materials	
Shaft Building Elements	
Show Component BIM Properties Window Cancel	ОК

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C1.4 CREATE OWN BIM PROPERTIES

Creating your own BIM standard



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C1.4 CREATE OWN BIM PROPERTIES

Creating your own BIM standard

 Further information can be found in the DigiPara online help: <u>Project BIM Settings</u>



Component BIM Properties **д X** Shaft0.Entries1.E0.ShaftDoor. **BIM Properties:** • by Type: LDXLandingDoor Enable for selected component Disable for selected component BIM Values Project Specific BIM Parameter Deutsche BAHN 1 10000 DigiPara® Autodesk® Revit® VDI 2552 Page 11.5 Properties Create Revit families based on (for LDXLandingDoor): By Document Default (Metric Generic Model) v

Project BIM Settings

C1.4 CREATE OWN BIM PROPERTIES

Customization of BIM Revit family names

 for a single DigiPara Liftdesigner project



Component BIM Properties **д X** . Shaft0.Entries1.E0.ShaftDoor. BIM Properties: • by Type: LDXLandingDoor Enable for selected component O Disable for selected component BIM Values DigiPara.RevitTargetName DigiPara® DigiPara DigiPara.LDXType LDXLandingDoor DigiPara.RevitTargetName LDXLandingDoor DigiPara.lfcExportAs IfcDoor **ELEVATOR** DigiPara.lfcExportType DigiPara.lfcParent FloorLevel. DigiPara.lfcFills Parent.Opening.Hole0. DigiPara.lfcAssignsTo Me.Shaft. Autodesk® Revit® VDI 2552 Page 11.5 Properties Create Revit families based on (for LDXLandingDoor): By Document Default (Metric Generic Model)

Project BIM Settings

🕫 digipara[®] liftdesigner

iftdesigner 🕫

C1.4 CREATE OWN BIM PROPERTIES

Customization of BIM Revit family names

- for a single DigiPara Liftdesigner project
- the DigiPara Liftdesigner object name of the components is preset
 - starting with LDX*

*	[SovS] Kender	
	Alle vorhandenen Oberflächen	450400011
	Texturwinkel	0
	Texturmaßstab	250
	Texturanordnung	Lokal
	Texturoption	Textur flächendeckend wiederholen
~		
	[42 IV] Produktaummistration	
Ť	Objektname	LDXLandingDoor, idLandingDoor
	Objektname RID	LDXLandingDoor, idLandingDoor 45
	Objektname RID PG_GRP	LDXLandingDoor, idLandingDoor 45 19593
	Dijektname RID PG_GRP PART_NO	LDXLandingDoor, idLandingDoor 45 19593 0
	Dijektname RID PG_GRP PART_NO	LDXLandingDoor, idLandingDoor 45 19593 0

Key: KEY_OBJECT_ADDCOMP Class: DigiPara.Win.Properties.PLDXObject





	- Bigh ara		
	DigiPara LDXType	LDXLandingDoor	ġ.
	DigiPara.RevitTargetName	LDXLandingDoor	, and a second s
	DigiPara.lfcExportAs	lfcDoor	j.
	DigiPara.lfcExportType	ELEVATOR	Ĩ.
	DigiPara.lfcParent	FloorLevel.	Ĩ.
	DigiPara.IfcFills	Parent.Opening.Hole0.	, m
	DigiPara.lfcAssignsTo	Me.Shaft.	i.
۲	Autodesk® Revit®		
•	VDI 2552 Page 11.5 Properties		

Create Revit families based on (for LDXLandingDoor):

By Document Default (Metric Generic Model)

Project BIM Settings

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C1.4 CREATE OWN BIM PROPERTIES

Customization of BIM Revit family names

project-related via the Component BIM
 Properties docking window

Component BIM Properties д Χ. Shaft0.Entries1.E0.ShaftDoor. **BIM Properties:** by Type: LDXLandingDoor Enable for selected component O Disable for selected component BIM Values DigiPara® DigiPara DigiPara LDVT DigiPara.RevitTargetName ShaftDoor ŝ DigiPara.ifcExportAs IfcDoor DigiPara.lfcExportType ELEVATOR DigiPara.lfcParent FloorLevel. DigiPara.lfcFills Parent.Opening.Hole0. DigiPara.lfcAssignsTo Me.Shaft. ñ Autodesk® Revit® VDI 2552 Page 11.5 Properties Create Revit families based on (for LDXLandingDoor): By Document Default (Metric Generic Model)



Create in the database table and distribute the data

Benefit: Global setting options for all projects and DigiPara Liftdesigner users

To prepare for working in the DigiPara database, the **DigiPara Liftdesigner Datamanager** application intended for this purpose should be thoroughly understood.

 The following training materials can be downloaded and used for this purpose: <u>A4 - Customization Fundamentals</u>

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🕫 digipara[®] liftdesigner

C1.4 CREATE OWN BIM PROPERTIES

Define DigiPara.RevitTargetName in the database

1. Data base table: BIM Properties



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C1.4 CREATE OWN BIM PROPERTIES

Define DigiPara.RevitTargetName in the database

- 2. Module / Library: 75:LD-Developer (RID 75 for training purposes only!)
- 3. Set filter

Sta	ndard Data Poo	l <u>[C:\</u> ProgramD	ata\DigiPara\2024\dcc\D	ataPool∖Da	ta\LD50 -				1	- .		A	a			
	75:LD-Develop	er		-	3	E			-1 -1			a	\$ +			
29	Sort modules by	descrit Z						Copy BIM Components	*	Band	4	Plus	1-	Column		FIIT
		Edi	t Database Settings	Level 1:	All modules		Grid	Rows	Grid Cells	CAParie		Vie	w Grid	d		
BIM	Properties 🛛 🗙			Level 2:	All modules All modules						Tabe	llenansicht				
Lift	designer Datama	nager: Drag a	column header, here to								<u></u> (General Dat	а			
Line	designer Datama	inager. Drag a	column neader here to		-						∎. I	.ift Data				
	BPS_RID						BPS_	DESC		BPS 🔺	🗄 Escalator Data					
•-	400300000	400300000	UK.COBie.Type		COBie UK BIM Level 2					This 📄	Sheet Template Data					
+ -	400300001	400300000	UK.COBie.Component		COBie UK BIM Level 2					This	BIM Configuration Settings					
+-	400300002	400300000	Architonic		Architonic Additional Information					Add	BIM Settings					
+-	400300003	400300000	ARCOM ONE		Arcom Produ	Arcom Product Master Spec properties						BIM F	^{>} roper	rties		
+ -	400300004	400300000	Spare Parts		Link to Spare Part in SPACES				This	BIM Family Templates						
•-	400300005	400300000	BIMobject SEEK		Construction	- Lifts						BIM (Units \$	Settings		
+-	400300006	400300000	RSK Databasen		RSK Database	en					<u>۱</u>	Franslation (& Help	ρ		
+-	400300007	400300000	Edibatec		Edibatec						∎. F	^o rogram Co	nfigura	ations		
+ -	400300008	400300000	DigiPara		DigiPara® System Properties											
+ -	400300009	400300000	Revit Standard Parame	ter	Revit Type Properties											
÷-	400300010	400300000	Revit IFC Shared Param	eters	Standardized	dardized shared parameters in Revit for the IFC										

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C1.4 CREATE OWN BIM PROPERTIES

Option 1: Exclude LDX

LDS("Me.DisplayValue").Replace("LDX","")

/ Pro	perties 🗶												
ftdesi	gner Datamana	ger: Drag a colur	nn header here to	group by that	t column.								
	BPS_RID	BPS_MF_RID	BPS_N	AME		BPS	DESC			BPS_COMMENT	BPS	MODE	BPS
	400300007	400300000	Edibatec		Edibatec						0		
	400300008	400300000	DigiPara		DigiPara® Syst	em Propert	ies				1792		
	BP_RID	BP_MF_RI △	BP_BPS_RID	BP	NAME		BP_DE	ic.		BP_COMMENT		BP_MOD	E
. -	400300082	400300000	400300008	DigiPara.LDX	Type	Basic Di	igiPara Com	oonent Type	typ	pical values are LDXC	Doc	8	:
e -	400300104	400300000	400300008	DigiPara.Revi	tTargetName	Custom	Customized Family name				0	(
	BPR_RID	BPR_MF_RID	BPR_BP_RID	BPR_DESC	BPR_COM B	PR_IX BR	R_LDXTYP	BPR_TRE		BPR_RU	ULE		
	- 400300	. 400300000	400300104			9999		LDS	s(IV	re.Displayvalue)			٦
	750000	750000	400300104			900		LD	S(")	Me.DisplayValue").R	eplace	e("LDX","")	
	BP_RID	BP_MF_RI △	BP_BPS_RID	BP			BP_DE	c		BP_COMMENT		BP_MOD	E
æ-	BP_RID 400300155	BP_MF_RI △ 400300000	BP_BPS_RID 400300008	BP DigiPara.IfcEx	P_NAME portType	Ifcexpor	BP_DE rt Type	SC .		BP_COMMENT		BP_MOD 8	E
	BP_RID 400300155 400300312	BP_MF_RI △ 400300000 400300000	BP_BPS_RID 400300008 400300008	BP DigiPara.lfcEx DigiPara.lfcPr	portType ojectName	lfctxpor Name d	BP_DE rt Type of the IfcPro	ect object i		BP_COMMENT		BP_MOD 8 0)E 1 6
÷	BP_RID 400300155 400300312 400300313	BP_MF_RI △ 400300000 400300000 400300000 400300000	BP_BPS_RID 400300008 400300008 400300008	BP DigiPara.IfcEx DigiPara.IfcPr DigiPara.IfcSit	portType ojectName teName	lfctxpoi Naine d Naine d	BP_DE rt Type of the IfcPro of the IfcSite	ect object i object in ex		BP_COMMENT		BP_MOD 8 0 0)E 1 6

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C1.4 CREATE OWN BIM PROPERTIES

Option 1: Exclude LDX

 for all components in DigiPara Liftdesigner





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C1.4 CREATE OWN BIM PROPERTIES

Option 2: Define your own designation

- BPR_LDXTYPES:LDXLandingDoor (create component reference)
- BPR_RULE: "Shaft Door"



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C1.4 CREATE OWN BIM PROPERTIES

Option 2: Define your own designation

Global for all projects

Compo	onent BIM Properties			д	×
⊿ Sha	ft0.Entries1.E0.ShaftDoor.				-
BI№	1 Properties: ● by Type: LDXLandingDoor ○ Enable for selected compo ○ Disable for selected compo	nent onent			
⊿ BIN	1 Values				
4 D	DigiPara®				
-	DigiPara				
	DigiPara.LDXType	LDXLandingDoor	Į.		
	DigiPara.RevitTargetName	ShaftDoor	ίų,		
	DigiPara.lfcExportAs	ltcDoor	141.		
	DigiPara.lfcExportType	ELEVATOR	144.		
	DigiPara.lfcParent	FloorLevel.	141.		
	DigiPara.lfcFills	Parent.Opening.Hole0.	111		
	DigiPara. IfcAssignsTo	Me.Shaft.	141		
► S	BB BIM - Beförderungsanlage	E. C.			
A A	utodesk® Revit®				



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C1.4 CREATE OWN BIM PROPERTIES

Further information on managing BIM standards and values in the DigiPara[®]Liftdesigner database.

- DigiPara[®] Online Help:
 - <u>Globally adjusting BIM Revit Family names (digipara.com)</u>
 - <u>Create your custom BIM Properties in DigiPara Liftdesigner Datamanager</u>

Distributing the data C1.4 CREATE OWN BIM PROPERTIES

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Export manufacturer modules

- into the data pool:
- A4 Customization Fundamentals

								DigiPar
Export Mar Modu Export	nufacturer iles : Data	Export Import Translation	Export Import Excel	English	w Annotation W - United Kingdo Annotate re rd Data Pool]	indow om - [2057] 🛛 🗸	Automatically maintained Hide Grid Colur	11 SI 2 SI 2 U mns Softwar
	Selection	n	Manufacturer		Status	Expiration date	Module RID 🛆	
-		Ceita			Valid	17/03/2024	66	
-		Moris			Valid	17/03/2024	68	
		LD-Develope	r		Valid	17/03/2024	75	
		LD Region Kit	t - French - Standar	d (FR)	Valid	17/03/2024	459	
		LD Region Kit	t - Italian - Standard	d (IT)	Valid	17/03/2024	476	
		LD Region Kit	t - Polish (PL)			17/03/2024	486	
		LD Region Kit	t - Russian (RU)			17/03/2024	492	
-		LD Region Kit	t - Spanish - Standa	rd (ES)		17/03/2024	499	
-		LD Region Ki	t - Turkish (TR)		Valid	17/03/2024	522	-
	DigiPara BIM Li Select Upe	ibrary: C:\ProgramData all Ur Export modules n Export Directory	DigiPara \2024\dcc\Da select all UVerfy Add a Add C Add P	RID conten nnotate files 'AD files 'rofile Group	a\LD50.mdf t Nodes files	Create Export TXT f	Dek	ete modules
						Check Sheet Frame	s files	Help .:

Customization Fundamentals

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BIM file export





Select the elevator coordinate system via the data tree \rightarrow Component \rightarrow Global also available in the respective export dialog Breadcrumb Document. Components. Global. 🔻 Favorites Breadcrumb **д х** Project Favorites Your global Favorites

Document. Components. Global. 🔻 Global. 😣 🔂 Favorites Options Project Favorites **д X** Properties Your global Favorites **.** . . Global [Global.] Global. 🔀 🔂 Lock Update [0024] Product Options Options This Object belongs to Product Opti 0 - @ Data tree ФΧ. [0026] Location 🖥 DigiPara Liftdesigner Project file Angle 0 X0 [mm] 500 Y0 [mm] 1000 🗄 📲 Global [Global.] Z0 [mm] 0 -- i32 COMPONENTS_MODE = 0 -- i32 LIST_COUNT = 1 -- i16 MODE = 8 Move and / or rotate --- i16 WALL = 0 ·人 3D - CS [LocalMatrix.] via the associated properties

д X

iftdesigner 🕫

Coordinate settings **C1.5 BIM FILE EXPORT**

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May 23, 2024





IFC = Industry Foundation Classes

- Comprehensive, standardized data format
- Manufacturer neutral
- Foundation for <u>BIG Open BIM</u>



- IFC versions:
 - IFC 4.3 is now ISO standard (published on January 9, 2024, buildingSMART)
 - <u>https://technical.buildingsmart.org/standards/ifc/ifc-schema-specifications/</u>

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IFC exports C1.5 BIM FILE EXPORT

DigiPara Liftdesigner IFC export result

 DigiPara Liftdesigner BIM properties in BIM Vision

🖭 🛅 T 🖱 T (🗏 T (• 17 F			BIMvision 2.27.1 -	- C:\			\ld301.ifc		?	[]	- 🗆	×
FILE VIEW OBJE	CTS SECTIONS	MEASUR	EMENT	CHANGES	PLUGINS								
3D Projections in space	© Reset zoom €€ Enclose	💽 Default	🍫 Top 🍡 Right	State left	Options	Object color *	X Y	Reset	👫 Clear	selected	✓ X axis ✓ Y axis	· ·	
2D view	💥 Fly mode 🔹	💕 Back	🚽 Left	Unotate light	· -	and minings	Z	· · · · · · · · · · · ·	- Cicui	un	✓ Z axis		
Туре	Camera			View				Storey slide		Offsets		See also	o 🗸
								IFC structure					▼ 4
					₽.	Name			Value				Uni
				Π	+ Ele	ment Specific							
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					C)igiPara.IfcAssignsTo		Me.Shaft.					
					C)igiPara.IfcExportAs		IfcDoor					
	1				C)igiPara.IfcExportType		ELEVATOR					
						DigiPara.IfcFills		Parent.Opening.Hole0.					_
		-				DigiPara.IfcParent		FloorLevel.					_
				ju -		NgiPara.LDX i ype	_	LDXLandingDoor					
						vit Standard Barama	e tor	ShaftDoor					
					Re	osembly Code	ter	D1010					
			L			escription		0					
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						OmniClass Number		23.23.11.11.21.11	_				
					T	ype Comments							
					⊡−Re	vit Standard Parame	ter f	or IFC Export (Revit 2023 and high	ner)				
					Е	xport to IFC As		IfcDoor	-				
					Е	xport Type to IFC As		IfcDoor					
					I	FC Predefined Type							
			- Aller - Aller		I	fcGUID		2wYdYzI3z47h87GS4TjSyE					
					L	ype IFC Predefined Typ	e						
						I2552_11_5_Doors							
					C)oorClearOpeningHeight		2 000					mm
					C)oorClearOpeningWidth		900					mm
🖹 C1 (ld301.ifc) 🔻 🖓 Site	 Document 	· @0 • 1	Doors •	BIMvision Shaft0.Entries1.E0.	ShaftDoor	*					3 m	0.00 s	0 *



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Interface: IFC object types (example)

- contained in the IFC export: geometries incl. necessary information content and descriptions
 - fixed definitions of elements by buildingSMART





IfcSwitchingDevice



lfcDoor

IfcElectricMotor



LDBIM exports C1.5 BIM FILE EXPORT

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LDBIM exports **C1.5 BIM FILE EXPORT**

LDBIM is a ZIP file and contains e.g.

Information file, xml

Line Polyline Circle

Start

PROPERTIES

No selection

General

Color

Layer

Linetype

Lineweight

Thickness

3D Visualization

Plot style

EXTERNAL REFERENCES

🎽 • 🖸 • 🔚 • 🕐

File References

Details

Plot style table None

Reference ... 🛦 Status

Model Layout1 +

Shaft0.Entries1.... Opened 64.5 KB

Material Plot style

Linetype scale 1.0000

Transparency ByLayer 0.0000

Draw -

- 📬 🍕 🖾

- ByLayer

ByLayer

Size

D 🖸 👻

ByLayer

ByLayer

- 3D DWGs of the individual assemblies
 - **Revit families**



DigiPara Liftdesigner LDBIM export result in Autodesk[®] Revit[®]

C1.5 BIM FILE EXPORT

LDBIM exports

- Inserted by the architect via DigiPara Elevatorarchitect
 - Free download: <u>DigiPara Elevatorarchitect</u>



Modify | Generic Models

Generic Models (1)

ShaftDoor_1 C1 Training

roperties

Constraints

Moves With Nearby Elements

→ Ba Edit Type

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(3D)

X Level 0




Disadvantage:

No or only a few BIM properties / values are transferred.

- Consists of only one Revit family or a single element.
- Closed BIM principle

Modify Specialty Equipment	Moves With Nearby Ele	ements		
Properties		X 🔂 {3D} X 🗎 Level	1	
LDTrainingSample	C1_01	•		
Specialty Equipment (1)	🗸 🖓 Edit Typ	pe		
Constraints		*		
Level	Level 1	1		
Elevation from Level	0.0	#		
Host	Level : Level 1			
Offset from Host	0.0			
Moves With Nearby Elements		a aa		
Electrical - Loads	.:	*		
Panel				
Circuit Number				
Dimensions		*		
DigiPara.lfcProjectName	C1			
DigiPara.lfcSiteName	Site	· · · · · ·		
DigiPara.lfcBuildingName	Document	Levvo		
Identity Data		*		
Image				
Comments				
Mark				
Phasing		× .		
Phase Created	New Construction			
Phase Demolished	None	-13		
IFC Parameters		× Leve		
IFC Predefined Type		8300		
Export to IFC As				
Export to IFC	Ву Туре			
IfcGUID	2d1\$3bKD5EsxqrrwWuSOLD	1		
		12		
Properties help	Apply	Level		
Project Browser - 4 Floors Samp	ble.rvt	×		
⊡[0] Views (all)		^ / ·		
Structural Plans			and the second s	
Floor Plans		avel 1		
Ceiling Plans		Le		
Level 1 Level 2		۰ 🖉		



C1.6

Notes on Autodesk® Revit®



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Insert LDBIM into Revit

C1.6 NOTES ON AUTODESK REVIT

Inserting LDBIM into an RVT project file

- Useful for arranging several elevators in one file for larger projects.
- Transfer of all elevator models in the correct position in one file (.ifc) for transfer.



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Insert LDBIM into Revit

C1.6 NOTES ON AUTODESK REVIT

The Liftdesigner plug-in enables easy integration and quick updates whenever required.



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The Revit "Shared Parameter" file

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C1.6 NOTES ON AUTODESK REVIT

Each "shared" = global parameter gets a unique Id (GUID)

GUID = Globally Unique Identifier

 uniquely identifies each component in an IFC file

Autodesk COBie Extension has predefined unique GUIDS for ist parameters

DigiPara COBie uses the same GUIDs

IgiPara_SharedParameters.txt - Notepad										
File Edit Format View Help										
# This is a Revit shared parameter file.										
# Do not edit manually.										
*META VERSION MINVERSION										
META	2	1		2						
*GROUP	ID	NAME								
GROUP	1	DigiPara								
GROUP	2	Revit Standard Parameter								
GROUP	3	UK.COBie.Type								
GROUP	4	UK.COBie.Component								
GROUP	5	UK.COBie								
*PARAM	GUID	NAME DATATYPE DATACA	EGORY GROUP VISIBLE DESCRIF	PTION	USERMOD	IFIABLE	HIDEWHENNOVALUE			
PARAM	48d7460	a-ec9f-43a3-b051-6192aacf722a	COBie.Type.ReplacementCost	CURRENC	Y		31,			
PARAM	28fa281	1-2a99-4fa5-bea7-155755699246	Assembly Code TEXT	2	1	Elevato	ors and Lifts/Esca			
PARAM	0b02931	.3-5040-4cc0-9f53-6cd3ea6ae189	COBie.Type.WarrantyDurationPart	ts	TEXT		3 1			
PARAM	db94911	.6-a361-4876-be1d-fe82769fc860	COBie.Component.SerialNumber	TEXT		4	1 The spec			
PARAM	5486dd1	.7-cd5d-4233-ae36-ac8f8965c838	COBie.Type.Size TEXT	3	1	Charact	eristic size of p			
PARAM	fc95531	f-3d82-40c6-b03f-c6a7cf97b828.	COBie.CreatedBy TEXT	5	1	Email a	address for the or			
PARAM	3ba1c32	8-0955-4f6c-9ab7-b873fa9edeb9	COBie.Type.Description TEXT		3	1	A short descript			
PARAM	af89e62	8-dddb-48d2-b7e2-0c43a1caf695	COBie.Type.CodePerformance	TEXT		3	1 The code			
PARAM	4b888e2	9-dfb5-4b06-a270-9d59c62e6077	COBie.CreatedOn TEXT	5	1	The dat	e and time expres			
PARAM	bd55d52	a-207a-4d1e-a5e6-646e00f0e000	COBie.Type.ExpectedLife TEXT		3	1	The typical serv			
PARAM	46ffbc2	b-2ebe-414c-ad61-af8c8234eb8c	COBie.Type.Grade TEXT		3	1	Standard grading			
PARAM	ca1c173	1-b3c4-4c35-a9fe-06cf78d28270	COBie.Type.WarrantyGuarantorPar	rts	TEXT		3 1			
PARAM	fea4633	2-2c3d-474b-9016-b1d649d76184	COBie.Component.Space TEXT		4	1	The room, floor,			
PARAM	c78c9c3	6-d89a-4ee2-8040-0ca48ab3dcd1	COBie.Component.Length LENGTH		4	1	Typically the la			
PARAM	5414df3	b-cfb4-40f2-813c-a5c129c0c480	COBie.Type.Color TEXT		3	1	Characteristic o			
PARAM	16c06d3	d-838a-4049-bafe-5484bc1c6815	COBie.Type.SustainabilityPerfor	rmance	TEXT		3 1			
PARAM	7e85314	1-e2bc-4ed9-b67a-220429bb19ce	COBie.Type.WarrantyDurationUnit	t TEXT		3	1 Duration			
PARAM	c62f2c4	3-d4cc-4584-97c7-1b93631821c4	COBie.Type.Manufacturer TEXT		3	1	Email address fo			
PARAM	d047f84	4-9187-4682-86ae-7deae256b2e8	COBie.Component.WarrantyStartDa	ate	TEXT		4 1			
PARAM	64b3564	5-9b6a-4416-b68a-810fc6c3de93	OmniClass Number TEXT		2	1	Vertical Transpo			
PARAM	caa9614	lf-7d1f-4b17-a17f-afd8e32c4fa8	COBie.Type.NominalHeight	LENGTH		3	1 Typicall			
PARAM	5074026	1-fc5c-42cb-b5cf-22bfcdae0d6d	COBie.Component.TagNumber	TEXT		4	1 The trac			
PARAM	0d964f6	4-6d3c-494d-b8d4-2c3bc50f719e	DigiPara.IfcFills TEXT		1	1	If non-empy: Voi			
PARAM	a4a71d6	5-98ff-466f-9c70-d8d281aae297	COBie YESNO 5	1	Marker	1	0			
PARAM	5e23306	5-a501-4b75-befd-73ae95e29807	COBie.Type.WarrantyGuarantorLab	oor	TEXT		3 1			
PARAM	dcc3dc6	b-e03d-40cc-ba11-9fc195ff6b00	COBie.Type.Name TEXT	3	1	This is	the name of the			



Practice

 \uparrow



BIM values & IFC exports

C1.7 PRACTICE

Creating an elevator project

- 3 floors
- Typical floor to floor distance 3500 mm
 - Consider travel no
 - Create building floor levels no
- 13 persons / 1000 kg, 1 m/s
- Traction elevator 1:1
- MRL
 - top
- Car roping
 - direct
 - without Counterweight safety gear
- Counterweight roping
 - direct
 - Counterweight left

- Sheet Templates
 - LDBIM-LOD100, 200, 300-Sheet
- Entrances
 - Eront: all floors
 - Right: last floor
- Floor Level Distances
 - Pit: 1300 mm
 - E1: Description K = -2800 mm (Niveau)
 - E2: Description EG = 2800 mm
 - E3: Description 1 = 3500 mm
 - Shaft Head: 4500 mm
- Save the project under the following file name: LDTrainingSampleC1 02.ld3

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BIM values & IFC exports

C1.7 PRACTICE

Export BIM format

- Switch on COBie UK Properties
- Create your own project-specific BIM parameters
- Export ICF 4.0
 - LOD 200
 - Model location: Rotation 45°
 - Location Z0: -4300 mm
- Check result in BIM Viewer





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IFC in BIM Vision

C1.8

Summary & custom Q&A's





Further information & feedback

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C1.8 SUMMARY & CUSTOM Q&A

Example of inserting the elevator for testing in a building (.ifc)

• in BIM Vision



Congratulations You reached the next level



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Your instructor will be available for individual questions after the module training.

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