

Gira Project Assistant Project Interface Documentation

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1 About the Gira Project Assistant project interface

The Gira Project Assistant project interface (GPA project interface) allows external providers to generate projects in the GPA by means of an import file. In the current version 1.0 the project interface supports only Gira KNX-IP devices of type "Gira X1" and the project type Visualization. This also includes functions, KNX data points and the assignment of KNX data points to functions.

2 Compatibility

This documentation refers to the most recent version listed below.

The compatible GPA and firmware versions, which refer to the respective version of the documentation, are also listed.

Version	GPA	Gira X1
v1.0 (current)	4.4 and above	2.5.353.0

3 Import file

The import file ends in **.gpt**, which stands for **GPA project templates**.

This import file can be loaded in the GPA via the menu or context menu in the same manner as an exported project. From the import file (the template), the GPA generates a valid GPA project, which can be edited with the GPA just like any other project.

4 Import format

The import file is a text file in XML format. This file contains a main node, in which the essential content of the project is described.

5 Content of the import file

Note about the following description

Conditions

- M = Mandatory = description is mandatory
- O = Optional = description is optional

Default

- If this information is not described explicitly, the described default value will be used or the GPA default behaviour will be used.
- Fields that are Mandatory do not have a default value

Data type

- Standard data types are generally used
- Elements = linked or subordinate elements can/must be listed

Format

Certain format rules can exist that are described either directly in this field or further below (if special types are used).

5.1 Root

The following fields must be described in the main node (root) of the XML file.

Element	Description	Condition	Default	Data type	Format	Comments
fileFormatVersion	File format version	M		string	Version (Major.Minor)	Currently 1.0, future expansions of the format are conceivable, in which case the version number will have to be raised.
projectName	Project name	O	GPA project name algorithm, as in creating a project	string	Max. 40 characters	The GPA assigns this name for the project. If it already exists, it will receive a unique name from the general name algorithm.
exportToolName	Third-party developer Tool name	M		string		The name of the application that creates the GPA interface file.
exportToolVersion	Third-party developer Tool version	M		string		The version of the application that creates the GPA interface file.
exportToolManufacturer	Third-party developer Name	M		string		The name of the developer of the application that creates the GPA interface file.

Element	Description	Condition	Default	Data type	Format	Comments
gpaMinVersion	Minimum version of the GPA for this project file	O	4.4	string	Version (Major.Minor)	The minimum version is assumed to be GPA 4.4. (first planned release with project interface). If a later version is required, this must be defined here.
projectSettings	Project scope	O		Elements	ProjectSettings	If no project settings are described, the necessary settings will automatically be created during import.
locations	Building structure	M		Elements	Locations []	List of the building structure with the devices and functions located there.
users	User	O		Elements	Users []	List of users to be created in the GPA in addition to the standard users (Administrator and Installer).
datapoints	(KNX) data points	O		Elements	Datapoints []	List of KNX data points to be created in the project.

5.2 Project settings

Definition of the project settings for the project scope. Currently, only the setting `visualizationSettings` is supported.

Element	Description	Condition	Default	Data type	Format	Comments
<code>visualizationSettings</code>	Activates KNX & Visualization	M	false	bool		

5.3 Locations

Locations are the building areas in a GPA project.
As in the GPA, they can be nested here to a depth of 10 levels.

Element	Description	Condition	Default	Data type	Format	Comments
<code>id</code>		M		int	ID	
<code>name</code>		O	Default name algorithm	string		
<code>type</code>	Type of location	M		string	Location.SubType	
<code>iconId</code>	Icon or visual representation of the element	O	Default for the location type	int	IconID	
<code>locations</code>	List of sub-elements of type Location	O		Elements	Locations[]	
<code>devices</code>	List of devices in this location	O		Elements	Devices[]	
<code>functions</code>	List of functions in this location	O		Elements	Functions[]	

5.4 Devices

Currently, only a Gira X1 that is located in a building area (location) can be described as a device.

Element	Description	Condition	Default	Data type	Format	Comments
id	Internal ID	M		int	ID	
name	Name of the device	O	Default name algorithm	string	string	
type	Type of device	M		string	Device.Type	To eliminate problems, the type of device must be defined.
version	Firmware version	M		string	Version (Major.Minor.Build)	For reasons of compatibility, the firmware version of the device to be used in the project must be defined.

5.5 Users

Users can be described as follows in the import file.

Element	Description	Condition	Default	Data type	Format	Comments
id	Internal ID	M		int	ID	
name	Name of user (name displayed in the GPA)	O	Default name algorithm	string		Invalid names: Everyone, System, Admin, Installer, Intercom, Device
login	Login name of user	O	Default login algorithm	string		No special characters; Must be unique within the project; For other invalid names see element <i>name</i>
role	Role of user	O	User (localized)	string	User.Role	

Note: In order for a user to use the Gira Smart Home app, a password must be assigned in the GPA for each user.

5.6 Data points

Data points must be assigned to a device. The following elements must be described under data points:

Element	Description	Condition	Default	Data type	Format	Comments
id	Internal ID	M		int	ID	
name	Name of data point	O	Default name algorithm	string		Invalid names: Everyone, System, Admin, Installer, Intercom, Device
deviceId	Assignment to the device on which the data point is created	M		int	ID	No special characters; Must be unique within the project; For other invalid names see element name
dpt	Data point type (KNX)	O	1.x	string	Datapoint.DPT	
writeGroupAddress	Sender group address	O		string	Datapoint.GroupAddress	
readGroupAddress	Status/feedback	O		string	Datapoint.GroupAddress	
listenerGroupAddresses	Listener group addresses	O		string	Datapoint.GroupAddress[]	
defaultValueInit	Initial value	O	none	string	Datapoint.DefaultValueInit	
defaultValue	Default value	O		string	Datapoint.DefaultValue	
persistValue	Keep value	O	false	bool		

5.7 Functions

Functions are defined directly in a location/building area in which they are to be located.
The following information must be described:

Element	Description	Condition	Default	Data type	Format	Comments
id	Internal ID	M		int	ID	
name	Name of function	O	Default name algorithm	string		
type	Function type; function identifier	M		string	Function.Type	
channelType	Type of channel below the function	M		string	Function.ChannelType	
deviceId	Assignment to the device on which the data point is created	M		int	ID	
iconId	Icon or visual representation of the element	O	Default algorithm	int	IconID	
trade	Trade of this function	O	Default algorithm	string	Function.Trade	
datapoints	Function data points	O		Elements	Function.Datapoints[]	Connections to data points
channel	Function channel	O		Element	Function.Channel	Connections to channels.
parameters	Function parameters	O		Elements	Parameters[]	

5.8 Function.Datapoints

Data points are assigned to a function by defining the data points with the corresponding index below the function. A complete description of the options available for each function will follow in a later chapter. The following elements must be described:

Element	Description	Condition	Default	Data type	Format	Comments
index	Index of the data point according to the description (see Format Function.Datapoint.Index)	M		int	Function.Datapoint.Index	
datapointId	ID of the data point assigned here	M		int	ID	

5.9 Parameters

Parameters are properties of functions. They differ depending on the function and are listed in a later chapter.

Element	Description	Condition	Default	Data type	Format	Comments
key	Key that describes the parameter	M		string	Parameter.Key	
value	Value for this parameter - depending on type	M		string	Parameter.Value	

5.10 Data types

This documentation mentions various data types, which are described in more detail below.

string

Text of 'unlimited' length, if not specified exactly. However, the characters should be UTF-8 compatible.

bool

Element	Description
True	<code>true; True; TRUE</code>
False	<code>false; False; FALSE</code>

int

The range of an integer value is dependent on the area of use.
If an element ID is described, for example, the normal integer value range applies without negative values.

5.11 Formats

In addition to the general data types, various formats are mentioned. They are explained in more detail here.

Version

The "Version" format is initially limited to `Major.Minor` for the file format. It is used for example to identify the version of an import file. The version of the device must be indicated in a 4-digit format.

ID

A unique ID as a positive whole number is used to identify the described elements. It may be 'defined' only once within the project file and may therefore appear only once in the ID attribute. It is used again in other objects with uniquely named attributes, which establishes a connection between these objects. An example is the device ID of a KNX data point. In this case the KNX data point is made available on the device assigned to the ID.

Location.SubType

Subtypes of `Locations` can have the following attributes:

SubType	Description
Building	Building
BuildingPart	Building area
Floor	Floor
Stairs	Stairway
Corridor	Hallway
Room	Room
ControlCabinet	Control cabinet

IconID

The `IconID` represents the value of an icon, which can be defined in the GPA or in the Gira Smart Home app. If this value is not assigned, the elements are created with the default icon for this element type.

The following icons and corresponding ID are available:

 1	 2	 3	 4	 5	 6	 7	 8	 9	 10	 11	 12	 13	 14	 15	 16	 17	 18	 19	 20	 21	 22	 23	 24	 25
 26	 27	 28	 29	 30	 31	 32	 33	 34	 35	 36	 37	 38	 39	 40	 41	 42	 43	 44	 45	 46	 47	 48	 49	 50
 51	 52	 53	 54	 55	 56	 57	 58	 59	 60	 61	 62	 63	 64	 65	 66	 67	 68	 69	 70	 71	 72	 73	 74	 75
 76	 77	 78	 79	 80	 81	 82	 83	 84	 85	 86	 87	 88	 89	 90	 91	 92	 93	 94	 95	 96	 97	 98	 99	 100
 101	 102	 103	 104	 105	 106	 107	 108	 109	 110	 111	 112	 113	 114	 115	 116	 117	 118	 119	 120	 121	 122	 123	 124	 125
 126	 127	 128	 129	 130	 131	 132	 133	 134	 135	 136	 137	 138	 139	 140	 141	 142	 143	 144	 145	 146	 147	 148	 149	 150
 151	 152	 153	 154	 155	 156	 157	 158	 159	 160	 161	 162	 163	 164	 165	 166	 167	 168	 169	 170	 171	 172	 173	 174	 175
 176	 177	 178	 179	 180	 181	 182	 183	 184	 185	 186	 187	 188	 189	 190	 191	 192	 193	 194	 195	 196	 197	 198	 199	 200

201	202	203	204	205	206	207	208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223	224	225
226	227	228	229	230	231	232	233	234	235	236	237	238	239	240	241	242	243	244	245	246	247	248	249	250
251	252	253	254	255	256	257	258	259	260	261	262	263	264	265	266	267	268	269	270	271	272	273	274	275
276	277	278	279	280	281	282	283	284	285	286	287	288	289	290	291	292	293	294	295	296	297	298	299	300
303	304	305	306	307	308	309	310	311	312	313	314	315	316	317	318	319		321	322		324			
326	327	328	329	330	331	332	333	334	335	336	337	338	339	340	341	342	343	344	345	346	347	348	349	350
351	352	353		355	356	357	358	359	360	361	362	363	364	365	366	367			370	371	372	373	374	375
376	377	378	379	380	381	382	383	384	385	386	387	388	389	390	391	392	393	394	395	396	397	398	399	
		403	404	405	406	407	408		410		412	413	414	415	416	417	418	419	420	421	422			
	427	428	429	430	431	432	433	434	435	436	437													

Device.Type

A device type must be defined for each device.

The following devices are supported in this version of the GPA project interface:

Possible types	Description
GIGSRVKX02	Gira X1

Function.Type, Function.ChannelType and Function.DataPoint.Index

To completely describe a function, it is necessary to define a **function type** (`type`) and its **channel type** (`channelType`). A function is completely described only if both items of information are provided. The reason for this is that a function points to a particular channel in the data model, which however can correspond to different channel types.

It is additionally possible to describe all corresponding data points. In this case, data points must be defined whose identifiers (indices) are can be seen in the following table in the column **Function.DataPoint.Index**.

The following function descriptions are available in the **Gira X1 v2.5**:

Name	Function.Type	Function.ChannelType	Function.DataPoint.Index	Data point name in the GPA	Condition for complete configuration
32-bit signed valuator	de.gira.schema.functions.SignedValue	de.gira.schema.channels.Integer	0	32-bit signed value	M
32-bit unsigned valuator	de.gira.schema.functions.UnsignedValue	de.gira.schema.channels.DWord	0	32-bit unsigned value	M
8-bit valuator 0...255	de.gira.schema.functions.Unsigned8BitValue	de.gira.schema.channels.Byte	0	8-bit unsigned value	M
8-bit valuator -128...127	de.gira.schema.functions.Signed8BitValue	de.gira.schema.channels.Integer	0	8-bit signed value	M
Audio control	de.gira.schema.functions.Audio	de.gira.schema.channels.AudioWithPlaylist	0	Playback	O
			1	Loudness	O
			2	Mute	O
			3	Previous title	O
			4	Next title	O
			5	Title	O
			6	Album	O
			7	Artist	O
			8	Playlist	O
			9	Previous playlist	O
			10	Next playlist	O
			11	Name of playlist	O
			12	Shuffle playlist	O
13	Repeat playlist	O			

Name	Function.Type	Function.ChannelType	Function.DataPoint.Index	Data point name in the GPA	Condition for complete configuration
Audio control (Sonos)	de.gira.schema.functions.Sonos.Audio	de.gira.schema.channels.Sonos.Audio	Note: No direct data point assignment possible! Sonos functions activate device data points in the background.		
Audio control with cover image	de.gira.schema.functions.Audio	de.gira.schema.channels.AudioWithCover	0	Playback	M
			1	Loudness	M
			2	Mute	O
			3	Previous title	O
			4	Next title	O
			5	Title	O
			6	Album	O
			7	Artist	O
			8	Playlist	O
			9	Previous playlist	O
			10	Next playlist	O
			11	Name of playlist	O
			12	Shuffle playlist	O
			13	Repeat playlist	O
14	Cover image	O			
Decimal valuator	de.gira.schema.functions.DecimalValue	de.gira.schema.channels.Float	0	Decimal value	M
Dimmer	de.gira.schema.functions.KNX.Light	de.gira.schema.channels.KNX.Dimmer	0	On/Off (Switch)	M
			1	Dim (brighter/darker)	O
			2	Brightness value	O

Name	Function.Type	Function.ChannelType	Function.DataPoint.Index	Data point name in the GPA	Condition for complete configuration
Dimmer (RGB / RGBW)	de.gira.schema.functions.ColoredLight	de.gira.schema.channels.DimmerRGBW	0	On/Off (Switch)	M
			1	Brightness value	O
			2	Red	M
			3	Green	M
			4	Blue	M
			5	White	O
Dimmer (tunable white)	de.gira.schema.functions.TunableLight	de.gira.schema.channels.DimmerWhite	0	On/Off (Switch)	M
			1	Brightness value	O
			2	Colour temperature	M
Heating and cooling	de.gira.schema.functions.KNX.HeatingCooling	de.gira.schema.channels.KNX.HeatingCoolingSwitchable	0	Actual temperature	M
			1	Set temperature	M
			2	Operating mode	O
			3	Operating mode status	O
			4	Presence	O
			5	Heating status	O
			6	Cooling status	O
			7	Switching between heating/cooling	O
			8	On/Off	O
IP camera	de.gira.schema.functions.Camera	de.gira.schema.channels.Camera	0	Camera active in Gira Smart Home app	O

Name	Function.Type	Function.ChannelType	Function.DataPoint.Index	Data point name in the GPA	Condition for complete configuration
Air conditioner	de.gira.schema.functions.KNX.FanCoil	de.gira.schema.channels.KNX.FanCoil	0	Actual temperature	M
			1	Set temperature	M
			2	On/Off	M
			3	Operating mode	M
			4	Fan level	O
			5	Vertical level	O
			6	Vertical Stop/Move	O
			7	Horizontal level	O
			8	Horizontal Stop/Move	O
			9	Error	O
			10	Error text	O
Percent valuator	de.gira.schema.functions.PercentValue	de.gira.schema.channels.Percent	0	Percentage	M
Roller shutter / blind	de.gira.schema.functions.Covering	de.gira.schema.channels.BlindWithPos	0	Up/Down (short-time operation)	M
			1	Ascend/Descend (long-time operation)	M
			2	Blinds in motion	O
			3	Position	O
			4	Louvre position	O
Sauna temperature	de.gira.schema.functions.SaunaHeating	de.gira.schema.channels.RoomTemperatureSwitchable	0	Actual temperature	M
			1	Set temperature	M
			2	On/Off	O

Name	Function.Type	Function.ChannelType	Function.DataPoint.Index	Data point name in the GPA	Condition for complete configuration
Switch	de.gira.schema.functions.Switch	de.gira.schema.channels.Switch	0	On/Off (Switch)	M
Binary status display	de.gira.schema.functions.BinaryStatus	de.gira.schema.channels.Binary	0	Binary value	M
Decimal status display	de.gira.schema.functions.NumericFloatStatus	de.gira.schema.channels.Float	0	Decimal value	M
Signed status display	de.gira.schema.functions.NumericSignedStatus	de.gira.schema.channels.Integer	0	32-bit signed value	M
Unsigned status display	de.gira.schema.functions.NumericUnsignedStatus	de.gira.schema.channels.DWord	0	32-bit unsigned value	M
Text status display	de.gira.schema.functions.TextStatus	de.gira.schema.channels.String	0	Text	M
Scene extension unit	de.gira.schema.functions.Scene	de.gira.schema.channels.SceneControl	0	Scene (extension unit entry)	M
Scene set	de.gira.schema.functions.Scene	de.gira.schema.channels.SceneSet	0	Execute	M
			1	Teach	O
Push button (Press/Release)	de.gira.schema.functions.PressAndHold	de.gira.schema.channels.Trigger	0	Trigger	M
Push button (On/Off)	de.gira.schema.functions.Trigger	de.gira.schema.channels.Trigger	0	Trigger	M
Temperature valuator	de.gira.schema.functions.TemperatureValue	de.gira.schema.channels.Temperature	0	Temperature value	M
URL call	de.gira.schema.functions.Link	de.gira.schema.channels.Link	0	URL active in Gira Smart Home app	O

Example:

- "Dimming" function to be implemented
 - Function.Type: de.gira.schema.functions.KNX.Light
 - Function.ChannelType: de.gira.schema.channels.KNX.Dimmer
 - Define data points
 - Connect data point "On/Off (Switch)" via index=0 and Id=Id of the corresponding data point
 - Connect data point "Brightness value" via index=1 and Id=Id of the corresponding data point
 - Connect data point "Dim (brighter/darker)" via index=2 and Id=Id of the corresponding data point

Parameter.Key and Parameter.Value

Every function generally has parameters. They are shown in the side bar in the GPA. All parameters must be described via the interface. The following list provides the identifiers of the parameters for the single functions and the possible values.

Function name	Function.Type	Function.ChannelType	Parameter.Key	Parameter name in the GPA	Possible values
32-bit signed valuator	de.gira.schema.functions.SignedValue	de.gira.schema.channels.Integer	ShowOnHomeScreen	Favourite	true;false
			ShowTimer	Display function timer	true;false
			Minimum	Lower limit	-2147483648 bis 2147483647
			Maximum	Upper limit	-2147483648 bis 2147483647
			Unit	Unit	(Text)
			Value	Default value	-2147483648 bis 2147483647
			CanChange	Allow changing of value	true;false
			ShowCurrentValue	Show current value	true;false
32-bit unsigned valuator	de.gira.schema.functions.UnsignedValue	de.gira.schema.channels.DWord	ShowOnHomeScreen	Favourite	true;false
			ShowTimer	Display function timer	true;false
			Minimum	Lower limit	0 to 4294967295
			Maximum	Upper limit	0 to 4294967295
			Unit	Unit	(Text)
			Value	Default value	0 to 4294967295
			CanChange	Allow changing of value	true;false
			ShowCurrentValue	Show current value	true;false

Function name	Function.Type	Function.ChannelType	Parameter.Key	Parameter name in the GPA	Possible values
8-bit valuator 0...255	de.gira.schema.functions.Unsigned8BitValue	de.gira.schema.channels.Byte	ShowOnHomeScreen	Favourite	true;false
			ShowTimer	Display function timer	true;false
			Minimum	Lower limit	0 bis 255
			Maximum	Upper limit	0 bis 255
			Unit	Unit	(Text)
			Value	Default value	0 bis 255
			CanChange	Allow changing of value	true;false
			StepSize	Increment	0 bis 255
			ShowCurrentValue	Show current value	true;false
8-bit valuator -128...127	de.gira.schema.functions.Signed8BitValue	de.gira.schema.channels.Integer	ShowOnHomeScreen	Favourite	true;false
			ShowTimer	Display function timer	true;false
			Minimum	Lower limit	-128 to 127
			Maximum	Upper limit	-128 to 127
			Unit	Unit	(Text)
			Value	Default value	-128 to 127
			CanChange	Allow changing of value	true;false
			StepSize	Increment	1; 2; 5; 10; 20
			ShowCurrentValue	Show current value	true;false
Audio control	de.gira.schema.functions.Audio	de.gira.schema.channels.AudioWithPlaylist	ShowOnHomeScreen	Favourite	true;false
Audio control (Sonos)	de.gira.schema.functions.Sonos.Audio	de.gira.schema.channels.Sonos.Audio	ShowOnHomeScreen	Favourite	true;false
			IpAddress	IP address	(IP address)

Function name	Function.Type	Function.ChannelType	Parameter.Key	Parameter name in the GPA	Possible values
Audio control with cover image	de.gira.schema.functions.Audio	de.gira.schema.channels.AudioWithCover	ShowOnHomeScreen	Favourite	true;false
Decimal valuator	de.gira.schema.functions.DecimalValue	de.gira.schema.channels.Float	ShowOnHomeScreen	Favourite	true;false
			ShowTimer	Display function timer	true;false
			Minimum	Lower limit	-1.7976931348623157E+308 to 1.7976931348623157E+308 but smaller than the maximum
			Maximum	Upper limit	-1.7976931348623157E+308 to 1.7976931348623157E+308 but greater than the minimum
			DecimalDigits	Decimal points	0 bis 2
			Unit	Unit	(Text)
			Value	Default value	-1.7976931348623157E+308 to 1.7976931348623157E+308 but greater or equal to the minimum and smaller or equal to the maximum
Decimal valuator	de.gira.schema.functions.DecimalValue	de.gira.schema.channels.Float	CanChange	Allow changing of value	true;false
			ShowCurrentValue	Show current value	true;false
Dimmer	de.gira.schema.functions.KNX.Light	de.gira.schema.channels.KNX.Dimmer	ShowOnHomeScreen	Favourite	true;false
			ShowTimer	Display function timer	true;false
			ButtonTimeout	Sensing time for dimmer function	0.1 bis 3
			ShowStatus	Show status	true;false
			OnText	Status text for "On"	(Text)
			OffText	Status text for "Off"	(Text)

Function name	Function.Type	Function.ChannelType	Parameter.Key	Parameter name in the GPA	Possible values
			DefaultShift	Increment for brighter/darker	1 bis 50
Dimmer (RGB / RGBW)	de.gira.schema.functions.ColoredLight	de.gira.schema.channels.DimmerRGBW	ShowOnHomeScreen	Favourite	true;false
			ShowTimer	Display function timer	true;false
			DefaultShift	Increment for brighter/darker	1 bis 50
			ButtonTimeout	Sensing time for continuous dimming	0.1 bis 3.0
			OnText	Status text for "On"	(Text)
			OffText	Status text for "Off"	(Text)
Dimmer (tunable white)	de.gira.schema.functions.TunableLight	de.gira.schema.channels.DimmerWhite	ShowOnHomeScreen	Favourite	true;false
			ShowTimer	Display function timer	true;false
			DefaultShift	Increment for brighter/darker	1 bis 50
			ButtonTimeout	Sensing time for continuous dimming	0.1 bis 3
			OnText	Status text for "On"	(Text)
			OffText	Status text for "Off"	(Text)
Dimmer (tunable white)	de.gira.schema.functions.TunableLight	de.gira.schema.channels.DimmerWhite	ColorTempMin	Minimum colour temperature	0 bis 10000
			ColorTempMax	Maximum colour temperature	0 bis 10000
Heating and cooling	de.gira.schema.functions.KNX.HeatingCooling	de.gira.schema.channels.KNX.HeatingCoolingSwitchable	ShowOnHomeScreen	Favourite	true;false
			ShowTimer	Display function timer	true;false
			SetPointRangeMin	Lower setpoint limit	0 bis 40
			SetPointRangeMax	Upper setpoint limit	0 bis 40
			StepSize	Increments of the setpoint shift	0.1; 0.2; 0.5; 1.0

Function name	Function.Type	Function.ChannelType	Parameter.Key	Parameter name in the GPA	Possible values
Heating and cooling	de.gira.schema.functions.KNX.HeatingCooling	de.gira.schema.channels.KNX.HeatingCoolingSwitchable	StatusType	Status type	Mode;Status
			HeatCool	Operating mode	Heating; Cooling; Heating and cooling
IP camera	de.gira.schema.functions.Camera	de.gira.schema.channels.Camera	ShowOnHomeScreen	Favourite	true;false
			VideoURI	Video URL	(Text)
			VideoCodec	Video codec	MJPEG;H264
Air conditioner	de.gira.schema.functions.KNX.FanCoil	de.gira.schema.channels.KNX.FanCoil	ShowOnHomeScreen	Favourite	true;false
			ShowTimer	Display function timer	true;false
			SetPointRangeMin	Lower setpoint limit	0 to 40
			SetPointRangeMax	Upper setpoint limit	0 to 40
			StepSize	Increments of the setpoint shift	0.1;0.2;0.5;1.0
			ShowModeAuto	Display operating mode "Automatic"	true;false
			ShowModeHeat	Display operating mode "Heat"	true;false
			ShowModeCool	Display operating mode "Cool"	true;false
			ShowModeFanOnly	Display operating mode "Ventilate"	true;false
			ShowModeDehumidification	Display operating mode "Dry"	true;false
			ShowFanSpeedLevel	Show fan level	true;false
			FanSpeedLevel	Number of fan levels	1;2;3;4;5 - Conditional visibility
			ShowFanSpeedLevelAuto	Display fan level "Automatic"	true;false - Conditional visibility
			ShowFanSpeedLevelStop	Display fan level "Stop"	true;false - Conditional visibility

Function name	Function.Type	Function.ChannelType	Parameter.Key	Parameter name in the GPA	Possible values
			ShowFanSpeedLevelMax	Display fan level "Maximum"	true;false - Conditional visibility
			FanSpeedLevelAuto	Fan level "Automatic"	0 to 255 - Conditional visibility
			FanSpeedLevelStop	Fan level "Stop"	0 to 255 - Conditional visibility
			FanSpeedLevelMax	Fan level "Maximum"	0 to 255 - Conditional visibility
			FanSpeedLevel1	Fan level 1	0 to 255 - Conditional visibility
Air conditioner	de.gira.schema.functions.KNX.FanCoil	de.gira.schema.channels.KNX.FanCoil	FanSpeedLevel2	Fan level 2	0 to 255 - Conditional visibility
			FanSpeedLevel3	Fan level 3	0 to 255 - Conditional visibility
			FanSpeedLevel4	Fan level 4	0 to 255 - Conditional visibility
			FanSpeedLevel5	Fan level 5	0 to 255 - Conditional visibility
			ShowFanUpDownLevel	Show vertical adjustment	true;false
			ShowFanUpDownStopMove	Show vertical adjustment "Stop/Move"	true;false
			FanUpDownStopValue	Vertical "Stop" value	0 to 1 - Conditional visibility
			FanUpDownMoveValue	Vertical "Move" value	0 to 1 - Conditional visibility
			FanUpDownLevel	Number of vertical levels	1;2;3;4;5 - Conditional visibility
			FanUpDownLevelStop	Vertical adjustment "Stop"	0 to 255 - Conditional visibility
			FanUpDownLevelMove	Levels of vertical movement	0 to 255 - Conditional visibility
			FanUpDownLevel1	Vertical level 1	0 to 255 - Conditional visibility
			FanUpDownLevel2	Vertical level 2	0 to 255 - Conditional visibility
			FanUpDownLevel3	Vertical level 3	0 to 255 - Conditional visibility
			FanUpDownLevel4	Vertical level 4	0 to 255 - Conditional visibility

Function name	Function.Type	Function.ChannelType	Parameter.Key	Parameter name in the GPA	Possible values
			FanUpDownLevel5	Vertical level 5	0 to 255 - Conditional visibility
			ShowFanLeftRightLevel	Show horizontal adjustment	true;false
			ShowFanLeftRightStopMove	Show horizontal adjustment "Stop/Move"	true;false
			FanLeftRightStopValue	Horizontal "Stop" value	0 to 1 - Conditional visibility
			FanLeftRightMoveValue	Horizontal "Move" value	0 to 1 - Conditional visibility
			FanLeftRightLevel	Number of horizontal levels	1;2;3;4;5 - Conditional visibility
			FanLeftRightLevelStop	Horizontal adjustment "Stop"	0 to 255 - Conditional visibility
			FanLeftRightLevelMove	Levels of horizontal movement	0 to 255 - Conditional visibility
			FanLeftRightLevel1	Horizontal level 1	0 to 255 - Conditional visibility
Air conditioner	de.gira.schema.functions.KNX.FanCoil	de.gira.schema.channels.KNX.FanCoil	FanLeftRightLevel2	Horizontal level 2	0 to 255 - Conditional visibility
			FanLeftRightLevel3	Horizontal level 3	0 to 255 - Conditional visibility
			FanLeftRightLevel4	Horizontal level 4	0 to 255 - Conditional visibility
			FanLeftRightLevel5	Horizontal level 5	0 to 255 - Conditional visibility
Percent valuator	de.gira.schema.functions.PercentValue	de.gira.schema.channels.Percent	ShowOnHomeScreen	Favourite	true;false
			ShowTimer	Display function timer	true;false
			Type	Value range	0..100;0..255
			Minimum	Lower limit	0 to 100 or 0 to 255 - depending on type
			Minimum	Lower limit	0 to 100 or 0 to 255 - depending on type
			Unit	Unit	(Text)
			Value	Default value	0 to 100 or 0 to 255 - depending on type

Function name	Function.Type	Function.ChannelType	Parameter.Key	Parameter name in the GPA	Possible values
			CanChange	Allow changing of value	true;false
			StepSize	Increment	1;2;5;10;20
Percent valuator	de.gira.schema.functions.PercentValue	de.gira.schema.channels.Percent	ShowCurrentValue	Show current value	true;false
Roller shutter / blind	de.gira.schema.functions.Covering	de.gira.schema.channels.BlindWithPos	ShowOnHomeScreen	Favourite	true;false
			ShowTimer	Display function timer	true;false
			ButtonTimeout	Sensing time for Ascend/Descend	0.1 bis 3.0
Sauna temperature	de.gira.schema.functions.SaunaHeating	de.gira.schema.channels.RoomTemperatureSwitchable	ShowOnHomeScreen	Favourite	true;false
			ShowTimer	Display function timer	true;false
			Range	Temperature range	40-70;50-80;60-90;70-100;80-110
			StepSize	Increment	1;5;10
Switch	de.gira.schema.functions.Switch	de.gira.schema.channels.Switch	ShowOnHomeScreen	Favourite	true;false
			ShowTimer	Display function timer	true;false
			Type	Type of control element	Button;Rocker
			Command	Function	On;Off;Toggle - only for Type=Button
			OnAction	Status text when switching on	(Text) - only for Type=Button
			OffAction	Status text when switching off	(Text) - only for Type=Button
			ShowStatus	Show status	true;false
			OnColor	Colour of the status display for "On"	Red;Green;Blue;Orange;Grey
Switch	de.gira.schema.functions.Switch	de.gira.schema.channels.Switch	OffColor	Colour of the status display for "Off"	Red;Green;Blue;Orange;Grey
			OnText	Status text for "On"	(Text)

Function name	Function.Type	Function.ChannelType	Parameter.Key	Parameter name in the GPA	Possible values
Switch	de.gira.schema.functions.Switch	de.gira.schema.channels.Switch	OffText	Status text for "Off"	(Text)
Binary status display	de.gira.schema.functions.BinaryStatus	de.gira.schema.channels.Binary	ShowOnHomeScreen	Favourite	true;false
			OnColor	Colour of the status display for "On"	Red;Green;Blue;Orange;Grey
			OffColor	Colour of the status display for "Off"	Red;Green;Blue;Orange;Grey
			OnText	Status text for "On"	(Text)
			OffText	Status text for "Off"	(Text)
Decimal status display	de.gira.schema.functions.NumericFloatStatus	de.gira.schema.channels.Float	ShowOnHomeScreen	Favourite	true;false
			DecimalDigits	Decimal points	0 bis 3
			Unit	Unit	(Text)
			Description	Description	(Text)
Signed status display	de.gira.schema.functions.NumericSignedStatus	de.gira.schema.channels.Integer	ShowOnHomeScreen	Favourite	true;false
			Unit	Unit	(Text)
			Description	Description	(Text)
Unsigned status display	de.gira.schema.functions.NumericUnsignedStatus	de.gira.schema.channels.DWord	ShowOnHomeScreen	Favourite	true;false
			Unit	Unit	(Text)
Text status display	de.gira.schema.functions.TextStatus	de.gira.schema.channels.String	ShowOnHomeScreen	Favourite	true;false
			Description	Description	(Text)
Scene extension unit	de.gira.schema.functions.Scene	de.gira.schema.channels.SceneControl	ShowOnHomeScreen	Favourite	true;false
			ShowTimer	Display function timer	true;false
			Scene	Scene number	1 bis 64
			CanLearn	Allow teaching	true;false

Function name	Function.Type	Function.ChannelType	Parameter.Key	Parameter name in the GPA	Possible values
Scene set	de.gira.schema.functions.Scene	de.gira.schema.channels.SceneSet	ShowOnHomeScreen	Favourite	true;false
			ShowTimer	Display function timer	true;false
			Scene	Scene number	1 bis 64
			CanLearn	Allow teaching	true;false
Push button (Press/Release)	de.gira.schema.functions.PressAndHold	de.gira.schema.channels.Trigger	ShowOnHomeScreen	Favourite	true;false
			Command	Command when button is pressed	On;Off
			Color	Colour of actuation display	Red;Green;Blue;Orange; Grey
			Text	Display text	(Text)
			ReleaseCommand	Command when button is released	On;Off
Push button (On/Off)	de.gira.schema.functions.Trigger	de.gira.schema.channels.Trigger	ShowOnHomeScreen	Favourite	true;false
			ShowTimer	Display function timer	true;false
			Command	Function	On;Off
			Color	Colour of actuation display	Red;Green;Blue;Orange; Grey
			Text	Display text	(Text)
Temperature valuator	de.gira.schema.functions.TemperatureValue	de.gira.schema.channels.Temperature	ShowOnHomeScreen	Favourite	true;false
			ShowTimer	Display function timer	true;false
			Minimum	Lower limit	-99 bis 99
			Maximum	Upper limit	-99 bis 99
			Unit	Unit	(Text)

Function name	Function.Type	Function.ChannelType	Parameter.Key	Parameter name in the GPA	Possible values
Temperature valuator	de.gira.schema.functions.TemperatureValue	de.gira.schema.channels.Temperature	Value	Default value	-99 bis 99
			CanChange	Allow changing of value	true;false
			ShowCurrentValue	Show current value	true;false
URL call	de.gira.schema.functions.Link	de.gira.schema.channels.Link	ShowOnHomeScreen	Favourite	true;false
			LinkURI	URL	(Text)

Function.Trade

It is possible to define a particular trade for a function.
The following trades are available:

Trade	Description
Switching	Switch
Lighting	Light
Hvac	Temperature: Heating/AC
Covering	Shade
Monitor	Status displays
Control	Valuator
Security	Security
Timer	Timers
Scenes	Scenes
Sequences	Sequences
Logic	Logic
Cameras	Camera
Multimedia	Multimedia
Links	IP connections / links

User.Role

Role	Description
User	Standard user. User access can be limited, etc.
Administrator	Administrator user. User automatically has access to all content in the Gira Smart Home app.

Datapoint.DPT

A particular data point type can be defined for a data point. If not defined, type "1.x" is used.

Examples:

Switch light: "1.x" for 1-bit or "1.001" for switching

Dim light: "5.x" for unsigned 8-bit or "5.001" for percentage from 0 to 100

Temperature: "9.x" for 2-byte floating point value or "9.001" for temperature in °C

A complete list of the KNX data point types is not provided here. The list of available data types can be obtained in the ETS, the GPA or on the Internet.

Datapoint.GroupAddress

The Writer/Sender, Reader/Status/Feedback and Listener group addresses can be defined for data points. The notation uses the "/" character, so that a group address could appear as follows, for example: "1/2/3".

A listing of group addresses is possible for the listeners. In this case, the addresses must be separated by a semicolon, e.g. "1/2/3;1/1/2".

Datapoint.DefaultValueInit

As in the GPA, the initial value of a data point can also be defined via the interface. The following options are available:

DefaultValueInit	Description
none	No initial value
readonstart	Read from KNX bus – initial value is read when the bus is started
defaultvalue	Default value can be defined via <code>defaultValue</code> - see <code>DataPoint.DefaultValue</code>

Datapoint.DefaultValue

Dependent on `defaultValueInit` it is possible to describe a default value.

In case `defaultValueInit=defaultvalue` this element is read out to define the initial value. The value must be formatted according to the data type of the data point.

6 Examples

Minimal example with X1, one function, one data point and two users

X1 with functions and data point

```
<?xml version="1.0" encoding="UTF-8"?>
<root>
  <fileFormatVersion>1.0</fileFormatVersion>
  <projectName>Mein erstes Projekt</projectName>
  <exportToolName>Third party tool name</exportToolName>
  <exportToolVersion>1.0.0</exportToolVersion>
  <exportToolManufacturer>Third party name</exportToolManufacturer>
  <gpaMinVersion>4.4</gpaMinVersion>

  <projectSettings>
    <visualizationSettings>>true</visualizationSettings>
  </projectSettings>

  <locations>
    <location>
      <id>101</id>
      <name>Gebäude</name>
      <type>Building</type>

    <locations>
      <location>
        <id>102</id>
        <name>EG</name>
        <type>Floor</type>

        <locations>
          <location>
            <id>103</id>
            <name>Schaltschrank</name>
            <type>ControlCabinet</type>

            <devices>
              <device>
                <id>110</id>
                <name>X1</name>
                <type>GIGSRVKX02</type>
                <version>2.5.353</version>
              </device>
            </devices>
          </location>

          <location>
            <id>104</id>
            <name>Wohnzimmer</name>
            <type>Room</type>

            <functions>
              <function>
                <id>105</id>
                <deviceId>110</deviceId>
                <name>Deckenlampe</name>
                <type>de.gira.schema.functions.Switch</type>
              </function>
            </functions>
          </location>
        </locations>
      </location>
    </locations>
  </root>
```

```

        <channelType>de.gira.schema.channels.Switch</channelType>
        <datapoints>
            <datapoint>
                <index>0</index>
                <datapointId>120</datapointId>
            </datapoint>
        </datapoints>

        <parameters>
            <parameter>
                <key>ShowOnHomeScreen</key>
                <value>>true</value>
            </parameter>
            <parameter>
                <key>OnAction</key>
                <value>Anschalten</value>
            </parameter>
            <parameter>
                <key>OnText</key>
                <value>An</value>
            </parameter>
            <parameter>
                <key>OnColor</key>
                <value>Red</value>
            </parameter>
        </parameters>
    </function>
</functions>
</location>
</locations>
</location>
</locations>
</location>
</locations>
</datapoints>
    <datapoint>
        <id>120</id>
        <name>WZ Deckenlampe schalten</name>
        <deviceId>110</deviceId>
        <dpt>1.001</dpt>
        <writeGroupAddress>1/1/1</writeGroupAddress>
        <readGroupAddress>1/2/1</readGroupAddress>
    </datapoint>
</datapoints>

<users>
    <user>
        <id>130</id>
        <name>Markus Weber</name>
        <role>Administrator</role>
    </user>
    <user>
        <id>131</id>
        <name>Anja Weber</name>
        <role>User</role>
    </user>
</users>
</root>

```

Building areas (locations)

Location with specific icon

```
<locations>
  <location>
    <id>101</id>
    <name>Gebäude</name>
    <type>Building</type>
    <iconId>111</iconId>
  </location>
</locations>
```

Data points

Data points with initial value

```
<datapoints>
  <datapoint>
    <id>120</id>
    <name>WZ Deckenlampe schalten</name>
    <deviceId>110</deviceId>
    <dpt>1.001</dpt>
    <writeGroupAddress>1/1/1</writeGroupAddress>
    <readGroupAddress>1/2/1</readGroupAddress>
    <defaultValueInit>defaultvalue</defaultValueInit>
    <defaultValue>1</defaultValue>
  </datapoint>
</datapoints>
```

Data points with listener group addresses

```
<datapoints>
  <datapoint>
    <id>120</id>
    <name>WZ Deckenlampe schalten</name>
    <deviceId>110</deviceId>
    <dpt>1.001</dpt>
    <writeGroupAddress>1/1/1</writeGroupAddress>
    <readGroupAddress>1/2/1</readGroupAddress>
    <listenerGroupAddresses>0/1/1;0/1/2</listenerGroupAddresses>
  </datapoint>
</datapoints>
```

Function

Function with icon and trade

```
<functions>
  <function>
    <id>105</id>
    <deviceId>110</deviceId>
    <name>WZ Deckenlampe</name>
    <type>de.gira.schema.functions.Switch</type>
    <iconId>111</iconId>
    <trade>Lighting</trade>
  </function>
</functions>
```

User

User with different roles

```
<users>
  <user>
    <id>120</id>
    <name>Markus Weber</name>
    <login>Markus</login>
    <role>Administrator</role>
  </user>
  <user>
    <id>121</id>
    <name>Anja Weber</name>
    <login>Anja</login>
    <role>User</role>
  </user>
</users>
```