

TR-064 Support – X_AVM-DE_WANMobileConnection

Supported by AVM

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1 urn:X_AVM-DE_WANMobileConnection-com:serviceId:X_AVM-DE_WANMobileConnection1

For details please refer the TR-064 document at

https://www.broadband-forum.org/technical/download/TR-064_Corrigendum-1.pdf.

1.1 History

Date	Version	Changes
2022-06-14	1	Initial Version
2022-08-31	2	Added new state variable Enable for action GetInfo Added new action GetInfoEx with corresponding state variables
2022-10-05	3	Added new field Connected for CellList
2022-11-07	4	Added new state variable CurrentAccessTechnology, SignalRSRP0 and SignalRSRP1 for GetInfoEx Added CellType for CellList Added new actions GetAccessTechnology, SetAccessTechnology, GetEnabledBandCapabilities, GetBandCapabilities and SetEnabledBandCapabilities with corresponding state variables
2022-11-18	5	Added new actions GetPreferredAccessTechnology and SetPreferredAccessTechnology with corresponding state variable

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2 Action List

This chapter contains the supported actions of the service X_AVM-DE_WANMobileConnection which are listed incl. arguments.

2.1 GetInfo

Returns information about status from entering PIN/PUK and remaining tries. After entering PIN and/or PUK the status needs a few seconds to get updated.

Required rights: App

Argument name	Direction	Related state variable	Remarks
NewEnable	out	Enable	
NewStatus	out	Status	
NewPINFailureCount	out	PINFailureCount	
NewPUKFailureCount	out	PUKFailureCount	

Table 1: Argument list of action GetInfo

2.2 GetInfoEx

Returns additional information about mobile status

Required rights: App

Argument name	Direction	Related state variable	Remarks
NewSerialNumber	out	SerialNumber	
NewEnableVoIPPDN	out	EnableVoIPPDN	
NewPPPUsername	out	PPPUsername	
NewPPPUsernameVoIP	out	PPPUsernameVoIP	
NewSoftwareVersion	out	SoftwareVersion	
NewUptime	out	Uptime	
NewPDN1_MTU	out	PDN1_MTU	
NewPDN2_MTU	out	PDN2_MTU	
NewIMSI	out	IMSI	
NewAPN_VoIP	out	APN_VoIP	
NewAPN	out	APN	
NewRoaming	out	Roaming	
NewCurrentAccessTechnology	out	CurrentAccessTechnology	
NewSignalRSRP0	out	SignalRSRP0	
NewSignalRSRP1	out	SignalRSRP1	
NewCellList	out	CellList	

Table 2: Argument list of action GetInfoEx

2.3 SetPIN

Sets SIM card PIN. The status has to be “factory default”, “unconfigured” or “enter PIN”.

Success can be checked with GetInfo

Required rights: App

Argument name	Direction	Related state variable	Remarks
NewPIN	in	PIN	

Table 3: Argument list of action SetPIN

Return code	Description	Related argument
402	Invalid Args	Invalid argument names, numbers or values
820	Internal Error	Something unexpected happend

Table 4: Return codes of action SetPIN

2.4 SetPUK

Sets SIM card PUK and PIN. The status has to be “factory default”, “unconfigured” or “enter PUK”, which appears after using all PIN tries (PINFailureCount = 0). The entered PIN will overwrite the existing PIN.

Success can be checked with GetInfo

Required rights: App

Argument name	Direction	Related state variable	Remarks
NewPUK	in	PUK	
NewIPIN	in	PIN	

Table 5: Argument list of action SetPUK

Return code	Description	Related argument
402	Invalid Args	Invalid argument names, numbers or values
820	Internal Error	Something unexpected happend

Table 6: Return codes of action SetPUK

2.5 SetAccessTechnology

Sets the Radio Access Technologies (RATs), which should be enabled. AccessTechnology is “AUTO” or a comma separated list of all to enable RATs

Required rights: App

Argument name	Direction	Related state variable	Remarks
NewAccessTechnology	in	AccessTechnology	

Table 7: Argument list of action SetAccessTechnology

Return code	Description	Related argument
402	Invalid Args	Invalid argument names, numbers or values
820	Internal Error	Something unexpected happend

Table 8: Return codes of action SetAccessTechnology

2.6 GetAccessTechnology

Returns all enabled RATs, all possible RATs and the currently used RAT.

Required rights: App

Argument name	Direction	Related state variable	Remarks
NewAccessTechnology	out	AccessTechnology	
NewPossibleAccessTechnology	out	PossibleAccessTechnology	
NewCurrentAccessTechnology	out	CurrentAccessTechnology	

Table 9: Argument list of action GetAccessTechnology

Return code	Description	Related argument
402	Invalid Args	Invalid argument names, numbers or values
820	Internal Error	Something unexpected happend

Table 10: Return codes of action GetAccessTechnology

2.7 SetPreferredAccessTechnology

Sets the preferred RAT. If you set "AUTO", the automatic mode will be enabled. All possible values can be found as comma separated string in GetPreferredAccessTechnology.

Required rights: App

Argument name	Direction	Related state variable	Remarks
NewPreferredAccessTechnology	in	PreferredAccessTechnology	

Table 11: Argument list of action SetPreferredAccessTechnology

Return code	Description	Related argument
401	Invalid Action	The action is not available on this device.
402	Invalid Args	Invalid argument names, numbers or values
820	Internal Error	Something unexpected happend

Table 12: Return codes of action SetPreferredAccessTechnology

2.8 GetPreferredAccessTechnology

Returns the current preferred RAT or "AUTO", if the automatic mode is enabled and all possible preferred RATs as a comma separated string.

Required rights: App

Argument name	Direction	Related state variable	Remarks
NewPreferredAccessTechnology	out	PreferredAccessTechnology	
NewPossiblePreferredAccessTechnology	out	PossiblePreferredAccessTechnology	

Table 13: Argument list of action GetPreferredAccessTechnology

Return code	Description	Related argument
401	Invalid Action	The action is not available on this device.
402	Invalid Args	Invalid argument names, numbers or values
820	Internal Error	Something unexpected happend

Table 14: Return codes of action *GetPreferredAccessTechnology*

2.9 SetEnabledBandCapabilities

Sets any number of bands for LTE, 5G-NSA and 5G-SA enabled. BandCapabilities(LTE, 5GNSA or 5GSA) is "0" for automatic mode or a comma separated list for specific bands

Required rights: App

Argument name	Direction	Related state variable	Remarks
NewBandCapabilitiesLTE	in	BandCapabilitiesLTE	
NewBandCapabilities5GNSA	in	BandCapabilities5GNSA	
NewBandCapabilities5GSA	in	BandCapabilities5GSA	

Table 15: Argument list of action *SetEnabledBandCapabilities*

Return code	Description	Related argument
402	Invalid Args	Invalid argument names, numbers or values
820	Internal Error	Something unexpected happend

Table 16: Return codes of action *SetEnabledBandCapabilities*

2.10 GetEnabledBandCapabilities

Returns the currently enabled bands for LTE, 5G-NSA and 5G-SA as comma separated list. "0" is the automatic mode.

Required rights: App

Argument name	Direction	Related state variable	Remarks
NewBandCapabilitiesLTE	out	BandCapabilitiesLTE	
NewBandCapabilities5GNSA	out	BandCapabilities5GNSA	
NewBandCapabilities5GSA	out	BandCapabilities5GSA	

Table 17: Argument list of action *GetEnabledBandCapabilities*

Return code	Description	Related argument
402	Invalid Args	Invalid argument names, numbers or values
820	Internal Error	Something unexpected happend

Table 18: Return codes of action *GetEnabledBandCapabilities*

2.11 GetBandCapabilities

Returns all available bands for LTE, 5G-NSA and 5G-SA as comma separated list. The value depends on the FRITZ!Box mobile module. “unknown” is returned, if the corresponding technology is not supported by the module.

Required rights: App

Argument name	Direction	Related state variable	Remarks
NewBandCapabilitiesLTE	out	BandCapabilitiesLTE	
NewBandCapabilities5GNSA	out	BandCapabilities5GNSA	
NewBandCapabilities5GSA	out	BandCapabilities5GSA	

Table 19: Argument list of action GetBandCapabilities

Return code	Description	Related argument
402	Invalid Args	Invalid argument names, numbers or values
820	Internal Error	Something unexpected happend

Table 20: Return codes of action GetBandCapabilities

3 Service States Table

Variable name	Send events	Allowed values (* == default)	Data type	Date
AccessTechnology	no	AUTO(*), GSM, UMTS, LTE, 5G-NSA, 5G-SA	String	2022-11-07
APN	no		String	2022-08-31
APN_VoIP	no		String	2022-08-31
BandCapabilitiesLTE	no	0(*)	String	2022-11-07
BandCapabilities5GNSA	no	0(*)	String	2022-11-07
BandCapabilities5GSA	no	0(*)	String	2022-11-07
CellList	no		String	2022-08-31
CurrentAccessTechnology	no	unkown(*), GSM, UMTS, EDGE, HSDPA, LTE, LTE-5GCN, 5GCN, 5G-SA, 5G-NSA	String	2022-11-07
Enable	no	0(*), 1	Boolean	2022-08-31
EnableVoIPPDN	no	0(*), 1	Boolean	2022-08-31
IMSI	no		String	2022-08-31
PDN1_MTU	no	0(*)	ui4	2022-08-31
PDN2_MTU	no	0(*)	ui4	2022-08-31
PIN	no		String	2022-07-07
PINFailureCount	no	0(*)	ui2	2022-07-07
PossibleAccessTechnology	no	""(*), GSM, UMTS, LTE, 5G-NSA, 5G-SA	String	2022-11-07
PossiblePreferredAccessTechnology	no	AUTO(*), NR5G, LTE, WCDMA	String	2022-11-18
PreferredAccessTechnology	no	AUTO(*), NR5G, LTE, WCDMA	String	2022-11-18
PPPUsername	no		String	2022-08-31
PPPUsernameVoIP	no		String	2022-08-31
PUK	no		String	2022-07-07
PUKFailureCount	no	0(*)	ui2	2022-07-07
Roaming	no	0(*)	Boolean	2022-08-31
SerialNumber	no		String	2022-08-31
SignalRSRP0	no	0(*)	i4	2022-11-07
SignalRSRP1	no	0(")	i4	2022-11-07
Status	no	""	String	2022-07-07
SoftwareVersion	no		String	2022-08-31
Uptime	no	0(*)	ui4	2022-08-31

Table 21: Variable list

3.1 Status values

Status value	Description
factory default	FRITZ!Box has factory default configuration
unconfigured	No PIN is configured
pin configured	PIN is set
checking SIM card	Checking SIM card and PIN
PIN successful	PIN is set and correct
no PIN mode	SIM card needs no PIN
change PIN	PIN has to be changed
SIM unlock	Device can be used with any SIM card
SIM lock	Device can only used with special SIM cards
SIM card defect	The SIM card is defect
SIM card locked	SIM card is completely locked, because entering PUK failed too many times
no SIM card	No SIM card is in device
enter PIN	Enter the SIM card PIN
enter PUK	Enter the SIM card PUK and a new PIN
PIN not possible	New PIN can not be used for this SIM card
Empty String	Unknown Status

Table 22: Possible values for state variable Status

4 XML Document Contents

4.1 CellList Contents

```

<CellList>
  <Cell>
    <Index>1</Index>
    <Connected>none</Connected>
    <CellType>lte</CellType>
    <PLMN>26202</PLMN>
    <Provider>Vodafone</Provider>
    <TAC>C0FC</TAC>
    <PhysicalId>323</PhysicalId>
    <Distance>0</Distance>
    <RSSI>103</RSSI>
    <RSRQ>-7</RSRQ>
    <RSRP>-97</RSRP>
    <Cellid>03584-03</Cellid>
  </Cell>
  ...
</CellList>

```

Tag	Type	Description
Cellid	string	Cell identification number
CellType	string	Type of the cell → gsm, umts, lte, nr5g
Connected	string	If connected to the cell → primary, secondary else: none
Distance	ui4	Distance to LTE eNodeB
Index	i4	Sequential number for cell
PhysicalId	ui4	Cell physical Id
PLMN	string	PLMN for eNodeB
Provider	string	Provider name calculated from PLMN
RSRP	i4	Reference Signal Received Power
RSRQ	i4	Reference Signal Received Quality
RSSI	i4	Received Signal Strength Indication
TAC	string	Tracking Area Code

Table 23: CellList content description