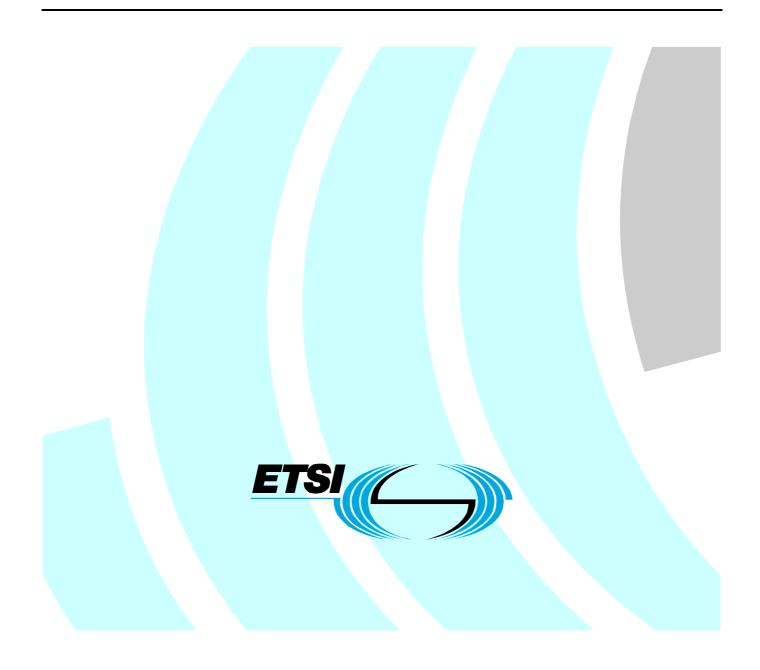
# ETSI TS 102 859-2 V1.1.1 (2011-03)

**Technical Specification** 

Intelligent Transport Systems (ITS); Testing; Conformance test specifications for Transmission of IP packets over GeoNetworking; Part 2: Test Suite Structure and Test Purposes (TSS&TP)



Reference DTS/ITS-0030009

Keywords ITS, network, TSS&TP, testing

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### Foreword

This Technical Specification (TS) has been produced by ETSI Technical Committee Intelligent Transport System (ITS).

The present document is part 2 of a multi-part deliverable covering Conformance test specifications for Transmission of IP packets over GeoNetworking as identified below:

Part 1: "Test requirements and Protocol Implementation Conformance Statement (PICS) proforma";

#### Part 2: "Test Suite Structure and Test Purposes (TSS&TP)";

Part 3: "Abstract Test Suite (ATS) and Protocol Implementation eXtra Information for Testing (PIXIT)".

### 1 Scope

The present document provides the Test Suite Structure and Test Purposes (TSS&TP) for Transmission of IP packets over Geonetworking as defined in TS 102 636-6-1 [1] in compliance with the relevant requirements and in accordance with the relevant guidance given in ISO/IEC 9646-7 [5].

The ISO standard for the methodology of conformance testing (ISO/IEC 9646-1 [2] and ISO/IEC 9646-2 [3]) as well as the ETSI rules for conformance testing (ETS 300 406 [6]) are used as a basis for the test methodology.

### 2 References

References are either specific (identified by date of publication and/or edition number or version number) or non-specific. For specific references, only the cited version applies. For non-specific references, the latest version of the reference document (including any amendments) applies.

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### 2.1 Normative references

The following referenced documents are necessary for the application of the present document.

- [1] ETSI TS 102 636-6-1 (V1.1.1): "Intelligent Transport Systems (ITS); Vehicular Communications; GeoNetworking; Part 6: Internet Integration; Sub-part 1: Transmission of IPv6 Packets over GeoNetworking Protocols".
- [2] ISO/IEC 9646-1 (1994): "Information technology Open Systems Interconnection Conformance testing methodology and framework Part 1: General concepts".
- [3] ISO/IEC 9646-2 (1994): "Information technology Open Systems Interconnection Conformance testing methodology and framework Part 2: Abstract Test Suite specification".
- [4] ISO/IEC 9646-6 (1994): "Information technology Open Systems Interconnection Conformance testing methodology and framework Part 6: Protocol profile test specification".
- [5] ISO/IEC 9646-7 (1995): "Information technology Open Systems Interconnection Conformance testing methodology and framework Part 7: Implementation Conformance Statements".
- [6] ETSI ETS 300 406 (1995): "Methods for testing and Specification (MTS); Protocol and profile conformance testing specifications; Standardization methodology".
- [7] IEEE 802.3:2005: "IEEE Standard for Information Technology Telecommunications and information exchange between systems-Local and metropolitan area networks - Specific requirements - Part 3: Carrier Sense Multiple Access with Collision Detection (CSMA/CD) Access Method and Physical Layer Specifications".

### 2.2 Informative references

The following referenced documents are not necessary for the application of the present document but they assist the user with regard to a particular subject area.

[i.1] ETSI EG 202 798: "Intelligent Transport Systems (ITS); Testing; Framework for conformance and interoperability testing".

# 3 Definitions and abbreviations

### 3.1 Definitions

For the purposes of the present document, the following terms and definitions apply:

- terms given in TS 102 636-6-1 [1];
- terms given in ISO/IEC 9646-6 [4] and in ISO/IEC 9646-7 [5].

### 3.2 Abbreviations

For the purposes of the present document, the following abbreviations apply:

BI	Invalid Behaviour
BV	Valid Behaviour
EVI	Expired virtual interfaces
GVL	Geographical Virtual Link
HT	Header Type
IPv6	Internet Protocol version 6
ITS	Intelligent Transportation Systems
IUT	Implementation Under Test
LT	Lifetime
MG	Message Generation
MR	Message Reception
NH	Next Header
NVI	New virtual interfaces
RA	Router Advertisment
SAP	Service Access Point
TP	Test Purposes
TSS	Test Suite Structure
TVL	Topological Virtual Link
VM	Virtual Interface Management

# 4 Test Suite Structure (TSS)

### 4.1 Structure for IPV6overGEONET tests

Table 1 shows the IPV6overGEONET Test Suite Structure (TSS) including its subgroups defined for conformance testing.

#### Table 1: TSS for IPV6overGEONET

Root	Group		category
IPv6GEO	Message Generation	GVL	Valid behaviour
		TVL	Valid behaviour
	Message Reception	GVL	Valid behaviour
		TVL	Valid behaviour
	Virtual Interface Management	New virtual interfaces	Valid behaviour
		Expired virtual interfaces	Valid behaviour

The test suite is structured as a tree with the root defined as IPv6GEO. The tree is of rank 3 with the first rank a Group, the second a Sub-group and the third a Category. The third rank is the standard ISO conformance test categories.

### 4.2 Test groups

### 4.2.1 Root

The root identify the Transmission of IP packets over Geonetworking given in TS 102 636-6-1 [1].

### 4.2.2 Groups

This level contains three functional areas identified as: Message Generation, Message Reception, and Virtual Interface Management.

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### 4.2.3 Sub-groups

This level contains four sub-functional areas identified as: GVL, TVL, New virtual interfaces , and Expired virtual interfaces.

### 4.2.4 Categories

This level contains the standard ISO conformance test categories limited to the valid behaviour.

# 5 Test Purposes (TP)

### 5.1 Introduction

### 5.1.1 TP definition conventions

The TPs are defined by the rules shown in table 2.

#### Table 2: TP definition rules

TP Header		
TP ID	The TP ID is a unique identifier. It shall be specified according to the TP naming conventions defined in clause 5.1.2.	
Test objective	Short description of test purpose objective according to the requirements from the base standard.	
Reference	The reference indicates the sub-clauses of the reference standard specifications in which the conformance requirement is expressed.	
PICS Selection	Reference to the PICS statement involved for selection of the TP. Contains a Boolean expression.	
	TP Behaviour	
Initial conditions	The initial conditions defines in which initial state the IUT has to be to apply the actual TP. In the corresponding Test Case, when the execution of the initial condition does not succeed, it leads to the assignment of an Inconclusive verdict.	
Expected behaviour (TP body)	Definition of the events, which are parts of the TP objective, and the IUT are expected to perform in order to conform to the base specification. In the corresponding Test Case, Pass or Fail verdicts can be assigned there.	
Final conditions	Definition of the events that the IUT is expected to perform or shall not perform, according to the base standard and following the correct execution of the actions in the expected behaviour above. In the corresponding Test Case, the execution of the final conditions is evaluated for the assignment of the final verdict.	

### 5.1.2 TP Identifier naming conventions

The identifier of the TP is built according to table 3.

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Identifier:	TP/ <root>/<gr>/<sgr>/<x>/<nn></nn></x></sgr></gr></root>		
	<root> = root</root>	IPv6GEO	IPv6 over Geonetworking
	<gr> = group</gr>	MG	Message Generation
		MR	Message Reception
		VM	Virtual Interface Management
	<sgr> = subgroup</sgr>	GVL	GVL
		TVL	TVL
		NVI	New virtual interfaces
		EVI	Expired virtual interfaces
	<x> = type of testing</x>	BV	Valid Behavior tests
		BI	Invalid Syntax or Behavior Tests
	<nn> = sequential number</nn>		01 to 99

### 5.1.3 Rules for the behaviour description

The description of the TP is built according to EG 202 798 [i.1].

### 5.1.4 Sources of TP definitions

All TPs are specified according to TS 102 636-6-1 [1].

# 5.2 Test purposes for IPV6overGEONET

# 5.2.1 Message Generation

### 5.2.1.1 GVL

TP Id	TP/IPv6GEO/MG/GVL/BV/01	
<b>Test objective</b> Checks that an IPv6 multicast message is carried out over a GeoBroadcast message into th		
	correct geographical area, with a GVL manually configured	
Reference	TS 102 636-6-1 [1], clauses 5.2.2, 5.3.3.1, 8.2.1 and 9.1.2	
PICS Selection	PICS_GVL and PICS_Ethernet and PICS_MIB_ManualAssigned	
FICO Selection		
vith {		
	nanually configured GVL (GVL1) and,	
	ayer being manually configured to use the virtual interface associated with GVL1	
	Expected behaviour	
ensure that {		
when {		
the IUT receiv	es an IPV6 packet from the Upper Layer	
containing	destination address	
indicati	ng a multicast IPv6 address	
}		
then {		
	a valid GeoNetworking GeoBroadcast message	
	the geographical Destination area corresponding to GVL1	
containing		
	ng value '2'	
containing		
	ng value'4'	
containing LT field		
indicating value '0' containing TC field		
0	ng a value derived from the IPv6 packet's Priority field (see note)	
	e IPv6 packet received from Upper Layer as payload	
}		
, ,		
NOTE: See table	1 of TS 102 636-6-1 [1] for derivation mapping.	

TP ld	TP/IPv6GEO/MG/GVL/BV/02	
Test objective	Checks that an IPv6 multicast message is carried out over a GeoBroadcast message into the	
	correct geographical area, with a GVL derived from a RA message	
Reference	TS 102 636-6-1 [1], clauses 5.2.2, 5.3.3.1, 8.2.1 and 9.1.2	
PICS Selection	PICS_GVL and PICS_Ethernet and PICS_MIB_RAAssigned	
	Initial conditions	
with {		
	eceived a GeoBroadcast message	
	ICMPv6 Router Advertisment (RA) message	
	utomatically configured a GVL (GVL1) derived from the received RA and,	
the IUT's Upper L	ayer being automatically configured to use the virtual interface associated with GVL1	
}		
	Expected behaviour	
ensure that {		
when {		
	ves an IPV6 packet from the Upper Layer	
	destination address	
indicat	ing a multicast IPv6 address	
}		
then {	a valid CapNaturating CapProvident manager	
	s a valid GeoNetworking GeoBroadcast message	
	the geographical Destination area corresponding to GVL1	
containing		
	ting value '2'	
containing	ing value'4'	
containing LT field		
indicating value '0' containing TC field		
	ting a value derived from the IPv6 packet's Priority field (see note)	
	ne IPv6 packet received from Upper Layer as payload	
}		
}		
NOTE: See table	1 of TS 102 636-6-1 [1] for derivation mapping.	

TP ld	TP/IPv6GEO/MG/GVL/BV/03	
Test objective	Checks that an IPv6 anycast message is carried out over a GeoAnycast message into the	
	correct geographical area, with a GVL link manually configured	
Reference	TS 102 636-6-1 [1], clauses 5.2.2, 5.3.3.1, 8.2.1 and 9.1.2	
PICS Selection	PICS_GVL and PICS_Ethernet and PICS_MIB_ManualAssigned	
	Initial conditions	
	manually configured GVL (GVL1) and, Layer being manually configured to use the virtual interface associated with GVL1	
}		
·	Expected behaviour	
ensure that {		
when {		
the IUT recei	ves an IPV6 packet from the Upper Layer	
containin	g destination address	
indica	ting a anycast IPv6 address	
}		
then {		
the IUT send	s a valid GeoNetworking GeoAnycast message	
containing	g the geographical Destination area corresponding to GVL1	
	g NH field	
	ting value '2'	
containin	g HT field	
	ting value'3'	
containing LT field		
indicating value '0'		
containing TC field		
indicating a value derived from the IPv6 packet's Priority field (see note)		
carrying t	he IPv6 packet received from Upper Layer as payload	
}		
}		
NOTE: See table	1 of TS 102 636-6-1 [1] for derivation mapping.	

TP ld	TP/IPv6GEO/MG/GVL/BV/04		
Test objective	Checks that an IPv6 anycast message is carried out over a GeoAnycast message into the		
	correct geographical area, with a GVL link derived from a RA message		
Reference	TS 102 636-6-1 [1], clauses 5.2.2, 5.3.3.1, 8.2.1 and 9.1.2		
PICS Selection	PICS_GVL and PICS_Ethernet and PICS_MIB_RAAssigned		
	Initial conditions		
with {			
the IUT having	received a GeoBroadcast message		
containing a	an ICMPv6 Router Advertisment (RA) message		
	automatically configured a GVL (GVL1) derived from the received RA and,		
the IUT's Uppe	r Layer being automatically configured to use the virtual interface associated with GVL1		
}			
	Expected behaviour		
ensure that {			
when {			
	eives an IPV6 packet from the Upper Layer		
	ng destination address		
indic	ating a anycast IPv6 address		
}			
then {			
	ds a valid GeoNetworking GeoAnycast message		
	ng the geographical Destination area corresponding to GVL1		
	ng NH field		
	ating value '2'		
	ng HT field		
	indicating value'3'		
	containing LT field		
indicating value '0'			
containing TC field indicating a value derived from the IPv6 packet's Priority field (see note)			
	indicating a value derived from the IPv6 packet's Priority field (see note) carrying the IPv6 packet received from Upper Layer as payload		
دمان در ۱	and in vo packet received norm opper Layer as payload		
}			
NOTE: See tab	le 1 of TS 102 636-6-1 [1] for derivation mapping.		

TP Id	TP/IPv6GEO/MG/GVL/BV/05		
Test objective	Checks that an IPv6 unicast message is carried out over a GeoUnicast when using a GVL		
	associated to an Ethernet V2.0/IEEE 802.3 LAN type virtual interface with address resolution		
Reference	TS 102 636-6-1 [1], clauses 5.2.2, 5.3.3.1, 8.2.1 and 9.1.2		
PICS Selection	PICS_GVLand PICS_Ethernet		
with {			
the IUT having	a configured GVL (GVL1) and,		
the IUT's Uppe	r Layer being configured to use the virtual interface associated with GVL1		
the IUT being o	onfigured with MIB attribute itsgn6as/VIResolAddr set to true		
}			
	Expected behaviour		
ensure that {			
when {			
	eives an IPV6 packet from the Upper Layer		
	ng destination address		
indic	ating unicast IPv6 address of the Tester		
}			
then {			
	ds a valid GeoUnicast message		
	ng DEPV field		
	aining GN_ADDR field ndicating value derived from the unicast IPv6 address IID		
	ng NH field		
	ating value '2'		
	ng HT field		
	ating value'2'		
	containing LT field		
indicating value '0'			
	containing TC field		
	indicating a value derived from the IPv6 packet's Priority field (see note)		
	carrying the IPv6 packet received from Upper Layer as payload		
}			
}			
NOTE: See tab	le 1 of TS 102 636-6-1 [1] for derivation mapping.		

TP Id	TP/IPv6GEO/MG/GVL/BV/06		
Test objective	Checks that an IPv6 unicast message is carried out over a GeoUnicast when using a GVL		
	associated to an Ethernet V2.0/IEEE 802.3 [7] LAN type virtual interface without address		
	resolution		
Reference	TS 102 636-6-1 [1], clauses 5.2.3, 5.3.3.2 and 8.2.1		
PICS Selection	PICS_GVL and PICS_Ethernet		
	Initial conditions		
with {			
the IUT having a	configured GVL (GVL1) and,		
	ayer being configured to use the virtual interface associated with GVL1		
the IUT being cor	figured with MIB attribute itsgn6as/VIResolAddr set to false		
}			
	Expected behaviour		
ensure that {			
when {			
the IUT receiv	ves an IPV6 packet from the Upper Layer		
	I destination address		
indicat	ing unicast IPv6 address of the Tester		
}			
then {			
	s a valid GeoUnicast message		
0	DEPV field		
	ning GN_ADDR field		
	icating value derived from the GN6_SAP destination parameter		
containing			
	ing value '2'		
containing			
	ing value'2'		
	containing LT field		
	ing value '0'		
containing			
	ing a value derived from the IPv6 packet's Priority field		
carrying th	ne IPv6 packet received from Upper Layer as payload		
}			
}			

### 5.2.1.2 TVL

TDL		
TP Id TP/IPv6GEO/MG/TVL/BV/01		
Test objective	Checks that an IPv6 unicast message is carried out over a GeoUnicast when using a TVL	
	associated to an NBMA type virtual interface with address resolution	
Reference	TS 102 636-6-1 [1], clauses 5.2.3, 5.3.3.2 and 8.2.1	
PICS Selection	PICS_NBMA	
	Initial conditions	
with {		
the IUT having a	configured NBMA TVL (TVL1) and,	
the IUT's Upper L	ayer being configured to use the virtual interface associated with TVL1	
the IUT being cor	figured with MIB attribute <i>itsgn6asIVIResoIAddr</i> set to true	
}		
	Expected behaviour	
ensure that {		
when {		
	es an IPV6 packet from the Upper Layer	
containing	destination address	
indicat	ing unicast IPv6 address of the Tester	
}		
then {		
the IUT sends	a valid GeoUnicast message	
5	DEPV field	
	ning GN_ADDR field	
	icating value derived from the unicast IPv6 address IID	
containing NH field		
	ing value '2'	
containing		
indicating value'2'		
containing LT field		
indicating value '0'		
containing		
	ing a value derived from the IPv6 packet's Priority field (see note)	
carrying th	e IPv6 packet received from Upper Layer as payload	
}		
}		
NOTE: See table	1 of TS 102 636-6-1 [1] for derivation mapping.	

TP Id       TP/IPv6GEO/MG/TVL/BV/02         Test objective       Checks that an IPv6 unicast message is carried out over a GeoUnicast when using a Trassociated to an NBMA type virtual interface without address resolution         Reference       TS 102 636-6-1 [1], clauses 5.2.3, 5.3.3.2 and 8.2.1         PICS Selection       PICS_NBMA         Initial conditions         with {       Initial conditions         with {       Initial conditions         with {       Imitial conditions         With {       Imitial conditions         Imitial configured NBMA TVL (TVL1) and, the IUT is Upper Layer being configured to use the virtual interface associated with TVL1 the IUT being configured with MIB attribute <i>itsgn6asIVIResolAddr</i> set to false         Expected behaviour       Imitial continue         Imitial continue       Imitial continue         Imitial continue       Imitial continue         Imitial conditions       Imitial continue         With {       Imitial conditions         Imitial conditions       Imitial continue         Imitial continue       Imitial continue         Imitial contin	VL	
associated to an NBMA type virtual interface without address resolution         Reference       TS 102 636-6-1 [1], clauses 5.2.3, 5.3.3.2 and 8.2.1         PICS Selection       PICS_NBMA         Initial conditions         with {         the IUT having a configured NBMA TVL (TVL1) and, the IUT's Upper Layer being configured to use the virtual interface associated with TVL1 the IUT being configured with MIB attribute <i>itsgn6asIVIResolAddr</i> set to false         }         Expected behaviour         ensure that {         when {         the IUT receives an IPV6 packet from the Upper Layer containing destination address indicating unicast IPv6 address of the Tester         }         then {         then {         the IUT sends a valid GeoUnicast message		
Reference       TS 102 636-6-1 [1], clauses 5.2.3, 5.3.3.2 and 8.2.1         PICS Selection       PICS_NBMA         Initial conditions         with {       the IUT having a configured NBMA TVL (TVL1) and, the IUT's Upper Layer being configured to use the virtual interface associated with TVL1 the IUT being configured with MIB attribute <i>itsgn6asIVIResolAddr</i> set to false         Expected behaviour         ensure that {       when {         the IUT receives an IPV6 packet from the Upper Layer containing destination address indicating unicast IPv6 address of the Tester         }       the IUT sends a valid GeoUnicast message		
PICS Selection       PICS_NBMA         Initial conditions         with {         the IUT having a configured NBMA TVL (TVL1) and,         the IUT having a configured NBMA TVL (TVL1) and,         the IUT's Upper Layer being configured to use the virtual interface associated with TVL1         the IUT's Upper Layer being configured to use the virtual interface associated with TVL1         the IUT being configured with MIB attribute <i>itsgn6asIVIResolAddr</i> set to false         Expected behaviour         ensure that {         when {         the IUT receives an IPV6 packet from the Upper Layer         containing destination address         indicating unicast IPv6 address of the Tester         }         then {         the IUT sends a valid GeoUnicast message		
<pre>with {     the IUT having a configured NBMA TVL (TVL1) and,     the IUT's Upper Layer being configured to use the virtual interface associated with TVL1     the IUT being configured with MIB attribute itsgn6as/VIResolAddr set to false } Expected behaviour ensure that {     when {         the IUT receives an IPV6 packet from the Upper Layer             containing destination address             indicating unicast IPv6 address of the Tester     }     the IUT sends a valid GeoUnicast message</pre>		
the IUT having a configured NBMA TVL (TVL1) and, the IUT's Upper Layer being configured to use the virtual interface associated with TVL1 the IUT being configured with MIB attribute <i>itsgn6asIVIResolAddr</i> set to false Expected behaviour ensure that {     when {         the IUT receives an IPV6 packet from the Upper Layer             containing destination address             indicating unicast IPv6 address of the Tester     }     then {         the IUT sends a valid GeoUnicast message		
the IUT's Upper Layer being configured to use the virtual interface associated with TVL1 the IUT being configured with MIB attribute <i>itsgn6asIVIResolAddr</i> set to false Expected behaviour ensure that { when { the IUT receives an IPV6 packet from the Upper Layer containing destination address indicating unicast IPv6 address of the Tester } then { the IUT sends a valid GeoUnicast message		
the IUT being configured with MIB attribute <i>itsgn6asIVIResolAddr</i> set to false  Expected behaviour  ensure that {     when {         the IUT receives an IPV6 packet from the Upper Layer             containing destination address             indicating unicast IPv6 address of the Tester     }     then {         the IUT sends a valid GeoUnicast message		
<pre>} Expected behaviour ensure that {     when {         the IUT receives an IPV6 packet from the Upper Layer             containing destination address             indicating unicast IPv6 address of the Tester     }     then {         the IUT sends a valid GeoUnicast message     } }</pre>		
ensure that {     when {         the IUT receives an IPV6 packet from the Upper Layer             containing destination address             indicating unicast IPv6 address of the Tester     }     then {         the IUT sends a valid GeoUnicast message		
ensure that {     when {         the IUT receives an IPV6 packet from the Upper Layer             containing destination address             indicating unicast IPv6 address of the Tester     }     then {         the IUT sends a valid GeoUnicast message		
<pre>when {     the IUT receives an IPV6 packet from the Upper Layer     containing destination address     indicating unicast IPv6 address of the Tester } then {     the IUT sends a valid GeoUnicast message</pre>		
the IUT receives an IPV6 packet from the Upper Layer containing destination address indicating unicast IPv6 address of the Tester } then { the IUT sends a valid GeoUnicast message		
containing destination address indicating unicast IPv6 address of the Tester } then { the IUT sends a valid GeoUnicast message		
indicating unicast IPv6 address of the Tester } then { the IUT sends a valid GeoUnicast message		
<pre>} then {     the IUT sends a valid GeoUnicast message</pre>		
the IUT sends a valid GeoUnicast message		
the IUT sends a valid GeoUnicast message		
containing GN_ADDR field		
indicating value derived from the GN6_SAP destination parameter		
containing NH field		
indicating value '2'		
containing HT field		
indicating value'2'		
containing LT field		
indicating value '0'		
containing TC field		
indicating a value derived from the IPv6 packet's Priority field carrying the IPv6 packet received from Upper Layer as payload		
l l		

Test objective         Checks that an IPv6 unicast message is carried out over a GeoUnicast when using a TVL associated to a Point-to-point type virtual interface with address resolution           Reference         TS 102 636-6-1 [1], clauses 5.2.3, 5.3.3 and 8.2.1           PICS Selection         PICS_Point-to-Point           Initial conditions           with {         Initial conditions           with {         the IUT having a configured point to point TVL (TVL1) and, the IUT being configured with MIB attribute <i>itsgn8asIVIResolAddr</i> set to true           Expected behaviour           ensure that {         Expected behaviour           ensure that {         ensure that {           when {         the IUT receives an IPV6 packet from the Upper Layer containing destination address indicating unicast IPv6 address of the Tester           }         the IUT sends a valid GeoUnicast message containing DEPV field containing DEPV field containing GN_ADDR field indicating value derived from the unicast IPv6 address IID containing H field indicating value 2'2' containing T field indicating value 2'2' containing T field indicating value 0'0 containing T field indicating value 0'0 containing T field indicating a value derived from the IPv6 packet's Priority field (see note) carrying the IPv6 packet received from Upper Layer as payload	TP ld	TP/IPv6GEO/MG/TVL/BV/03		
associated to a Point-to-point type Virtual interface with address resolution         Reference       TS 102 636-61 [1], clauses 5.2.3, 5.3.3 and 8.2.1         PICS Selection       PICS_Point-to-Point         Initial conditions         with {       the IUT having a configured point to point TVL (TVL1) and, the IUT's Upper Layer being configured to use the virtual interface associated with TVL1         the IUT being configured with MIB attribute <i>itsgn6aslVIResolAddr</i> set to true          Expected behaviour         ensure that {       when {         the IUT receives an IPV6 packet from the Upper Layer containing destination address indicating unicast IPv6 address of the Tester         }       the IUT sends a valid GeoUnicast message containing DEPV field containing MADDR field indicating value derived from the unicast IPv6 address IID containing NH field indicating value (2' containing IT field indicating value '2' containing IT field indicating value '2' containing IT field indicating value '0' containing T field indicating value '0' containing T field indicating value form the IPv6 packet's Priority field (see note) carrying the IPv6 packet received from Upper Layer as payload	Test objective			
Reference         TS 102 636-6-1 [1], clauses 5.2.3, 5.3.3.3 and 8.2.1           PICS Selection         PICS_Point-to-Point           Initial conditions           with {         Initial conditions           with being configured point to point TVL (TVL1) and, the IUT being configured with MIB attribute <i>itsgn6asIVIResolAddr</i> set to true           Expected behaviour           ensure that {         Expected behaviour           when {         the IUT receives an IPV6 packet from the Upper Layer containing destination address indicating unicast IPv6 address of the Tester           then {         the IUT sends a valid GeoUnicast message containing GN_ADDR field indicating value derived from the unicast IPv6 address IID containing NH field indicating value '2' containing IT field indicating value '2' containing IT field indicating value '2' containing IT field indicating value '0' containing IT field indicating value '0' containing IT field indicating a value derived from the IPv6 packet's Priority field (see note) carrying the IPv6 packet received from Upper Layer as payload				
PICS Selection       PICS_Point-to-Point         Initial conditions         with {         the IUT having a configured point to point TVL (TVL1) and, the IUT's Upper Layer being configured to use the virtual interface associated with TVL1 the IUT being configured with MIB attribute <i>itsgn6asIVIResoIAddr</i> set to true         Expected behaviour         ensure that {         when {         the IUT receives an IPV6 packet from the Upper Layer containing destination address indicating unicast IPv6 address of the Tester         }         then {         the IUT sends a valid GeoUnicast message containing OEPV field indicating value derived from the unicast IPv6 address IID         containing NA Field indicating value '2'         containing HT field indicating value '2'         containing IT field indicating value '0'         containing TC field indicating a value derived from the IPv6 packet's Priority field (see note) carrying the IPv6 packet received from Upper Layer as payload	Reference			
<pre>with {     the IUT having a configured point to point TVL (TVL1) and,     the IUT's Upper Layer being configured to use the virtual interface associated with TVL1     the IUT being configured with MIB attribute <i>itsgn6asIVIResolAddr</i> set to true</pre>	PICS Selection			
the IUT having a configured point to point TVL (TVL1) and, the IUT's Upper Layer being configured to use the virtual interface associated with TVL1 the IUT being configured with MIB attribute <i>itsgn6asIVIResoIAddr</i> set to true Expected behaviour ensure that { when { the IUT receives an IPV6 packet from the Upper Layer containing destination address indicating unicast IPv6 address of the Tester } then { the IUT sends a valid GeoUnicast message containing DEPV field containing GN_ADDR field indicating value derived from the unicast IPv6 address IID containing HT field indicating value '2' containing HT field indicating value'2' containing T field indicating value '0' containing T field indicating value '0' containing T field indicating value derived from the IPv6 packet's Priority field (see note) carrying the IPv6 packet received from Upper Layer as payload }		Initial conditions		
the IUT's Upper Layer being configured to use the virtual interface associated with TVL1 the IUT being configured with MIB attribute <i>itsgn6asIVIResolAddr</i> set to true Expected behaviour ensure that { when { the IUT receives an IPV6 packet from the Upper Layer containing destination address indicating unicast IPv6 address of the Tester } then { the IUT sends a valid GeoUnicast message containing DEPV field containing GN_ADDR field indicating value derived from the unicast IPv6 address IID containing HT field indicating value '2' containing HT field indicating value '0' containing TC field indicating a value derived from the IPv6 packet's Priority field (see note) carrying the IPv6 packet received from Upper Layer as payload	with {			
the IUT's Upper Layer being configured to use the virtual interface associated with TVL1 the IUT being configured with MIB attribute <i>itsgn6asIVIResolAddr</i> set to true Expected behaviour ensure that { when { the IUT receives an IPV6 packet from the Upper Layer containing destination address indicating unicast IPv6 address of the Tester } then { the IUT sends a valid GeoUnicast message containing DEPV field containing GN_ADDR field indicating value derived from the unicast IPv6 address IID containing HT field indicating value '2' containing HT field indicating value '0' containing TC field indicating a value derived from the IPv6 packet's Priority field (see note) carrying the IPv6 packet received from Upper Layer as payload	the IUT having	a configured point to point TVL (TVL1) and,		
the IUT being configured with MIB attribute <i>itsgn6asIVIResolAddr</i> set to true  Expected behaviour  ensure that {     when {         the IUT receives an IPV6 packet from the Upper Layer             containing destination address             indicating unicast IPv6 address of the Tester     }     then {         the IUT sends a valid GeoUnicast message             containing DEPV field             containing GN_ADDR field             indicating value derived from the unicast IPv6 address IID             containing NH field             indicating value '2'             containing IT field             indicating value '2'             containing IT field             indicating value '0'             containing TC field             indicating a value derived from the IPv6 packet's Priority field (see note)             carrying the IPv6 packet received from Upper Layer as payload     } }				
Expected behaviour ensure that { when { the IUT receives an IPV6 packet from the Upper Layer containing destination address indicating unicast IPv6 address of the Tester } then { the IUT sends a valid GeoUnicast message containing DEPV field containing ON_ADDR field indicating value derived from the unicast IPv6 address IID containing NH field indicating value '2' containing IT field indicating value '2' containing IT field indicating value '0' containing TC field indicating a value derived from the IPv6 packet's Priority field (see note) carrying the IPv6 packet received from Upper Layer as payload				
ensure that {     when {         the IUT receives an IPV6 packet from the Upper Layer             containing destination address             indicating unicast IPv6 address of the Tester     }     then {         the IUT sends a valid GeoUnicast message         containing DEPV field             containing GN_ADDR field             indicating value derived from the unicast IPv6 address IID         containing NH field             indicating value '2'         containing LT field             indicating value '0'         containing TC field             indicating value derived from the IPv6 packet's Priority field (see note)         carrying the IPv6 packet received from Upper Layer as payload     } }	}	о С		
<pre>when {     the IUT receives an IPV6 packet from the Upper Layer     containing destination address     indicating unicast IPv6 address of the Tester } then {     the IUT sends a valid GeoUnicast message     containing DEPV field         containing GN_ADDR field         indicating value derived from the unicast IPv6 address IID     containing NH field         indicating value '2'     containing HT field         indicating value '2'     containing LT field         indicating value '0'     containing T C field         indicating a value derived from the IPv6 packet's Priority field (see note)         carrying the IPv6 packet received from Upper Layer as payload } </pre>		Expected behaviour		
the IUT receives an IPV6 packet from the Upper Layer containing destination address indicating unicast IPv6 address of the Tester } then { the IUT sends a valid GeoUnicast message containing DEPV field containing GN_ADDR field indicating value derived from the unicast IPv6 address IID containing NH field indicating value '2' containing HT field indicating value'2' containing LT field indicating value '0' containing TC field indicating a value derived from the IPv6 packet's Priority field (see note) carrying the IPv6 packet received from Upper Layer as payload	ensure that {			
<pre>containing destination address indicating unicast IPv6 address of the Tester } then {     the IUT sends a valid GeoUnicast message containing DEPV field containing GN_ADDR field indicating value derived from the unicast IPv6 address IID containing NH field indicating value '2' containing HT field indicating value'2' containing LT field indicating value '0' containing TC field indicating a value derived from the IPv6 packet's Priority field (see note) carrying the IPv6 packet received from Upper Layer as payload }</pre>				
<pre>indicating unicast IPv6 address of the Tester } then {     the IUT sends a valid GeoUnicast message         containing DEPV field         containing GN_ADDR field         indicating value derived from the unicast IPv6 address IID         containing NH field         indicating value '2'         containing HT field         indicating value'2'         containing LT field         indicating value '0'         containing TC field         indicating a value derived from the IPv6 packet's Priority field (see note)         carrying the IPv6 packet received from Upper Layer as payload }</pre>				
<pre>} then {     the IUT sends a valid GeoUnicast message         containing DEPV field         containing GN_ADDR field         indicating value derived from the unicast IPv6 address IID         containing NH field         indicating value '2'         containing HT field         indicating value'2'         containing LT field         indicating value '0'         containing TC field         indicating a value derived from the IPv6 packet's Priority field (see note)         carrying the IPv6 packet received from Upper Layer as payload }</pre>				
the IUT sends a valid GeoUnicast message containing DEPV field containing GN_ADDR field indicating value derived from the unicast IPv6 address IID containing NH field indicating value '2' containing HT field indicating value'2' containing LT field indicating value '0' containing TC field indicating a value derived from the IPv6 packet's Priority field (see note) carrying the IPv6 packet received from Upper Layer as payload	indic	ating unicast IPv6 address of the Tester		
the IUT sends a valid GeoUnicast message containing DEPV field containing GN_ADDR field indicating value derived from the unicast IPv6 address IID containing NH field indicating value '2' containing HT field indicating value'2' containing LT field indicating value '0' containing TC field indicating a value derived from the IPv6 packet's Priority field (see note) carrying the IPv6 packet received from Upper Layer as payload	}			
containing DEPV field containing GN_ADDR field indicating value derived from the unicast IPv6 address IID containing NH field indicating value '2' containing HT field indicating value'2' containing LT field indicating value '0' containing TC field indicating a value derived from the IPv6 packet's Priority field (see note) carrying the IPv6 packet received from Upper Layer as payload				
containing GN_ADDR field indicating value derived from the unicast IPv6 address IID containing NH field indicating value '2' containing HT field indicating value'2' containing LT field indicating value '0' containing TC field indicating a value derived from the IPv6 packet's Priority field (see note) carrying the IPv6 packet received from Upper Layer as payload				
indicating value derived from the unicast IPv6 address IID containing NH field indicating value '2' containing HT field indicating value'2' containing LT field indicating value '0' containing TC field indicating a value derived from the IPv6 packet's Priority field (see note) carrying the IPv6 packet received from Upper Layer as payload				
containing NH field indicating value '2' containing HT field indicating value'2' containing LT field indicating value '0' containing TC field indicating a value derived from the IPv6 packet's Priority field (see note) carrying the IPv6 packet received from Upper Layer as payload				
indicating value '2' containing HT field indicating value'2' containing LT field indicating value '0' containing TC field indicating a value derived from the IPv6 packet's Priority field (see note) carrying the IPv6 packet received from Upper Layer as payload }				
containing HT field indicating value'2' containing LT field indicating value '0' containing TC field indicating a value derived from the IPv6 packet's Priority field (see note) carrying the IPv6 packet received from Upper Layer as payload }				
indicating value'2' containing LT field indicating value '0' containing TC field indicating a value derived from the IPv6 packet's Priority field (see note) carrying the IPv6 packet received from Upper Layer as payload }				
containing LT field indicating value '0' containing TC field indicating a value derived from the IPv6 packet's Priority field (see note) carrying the IPv6 packet received from Upper Layer as payload }				
indicating value '0' containing TC field indicating a value derived from the IPv6 packet's Priority field (see note) carrying the IPv6 packet received from Upper Layer as payload }				
containing TC field indicating a value derived from the IPv6 packet's Priority field (see note) carrying the IPv6 packet received from Upper Layer as payload }				
indicating a value derived from the IPv6 packet's Priority field (see note) carrying the IPv6 packet received from Upper Layer as payload }				
carrying the IPv6 packet received from Upper Layer as payload }	<b>v</b>			
}				
<i>I }</i>	ι carrying	ine in vo packet received nonn opper Layer as payload		
1	1			
NOTE: See table 1 of TS 102 636-6-1 [1] for derivation mapping.	/ NOTE: See tab	le 1 of TS 102 636-6-1 [1] for derivation mapping.		

TP Id	TP/IPv6GEO/MG/TVL/BV/04	
Test objective	Checks that an IPv6 unicast message is carried out over a GeoUnicast when using a TVL	
Test objective	associated to a Point-to-point type virtual interface without address resolution	
Deference		
Reference	TS 102 636-6-1 [1], clauses 5.2.3, 5.3.3.3 and 8.2.1	
PICS Selection	PICS_Point-to-Point	
	Initial conditions	
with {		
	configured point to point TVL (TVL1) and,	
	_ayer being configured to use the virtual interface associated with TVL1	
the IUT being co	nfigured with MIB attribute itsgn6as/VIResolAddr set to false	
}		
	Expected behaviour	
ensure that {		
when {		
	ves an IPV6 packet from the Upper Layer	
	g destination address	
indica	ting unicast IPv6 address of the Tester	
}		
then {		
	s a valid GeoUnicast message	
	J DEPV field	
	ning GN_ADDR field	
	licating value derived from the unicast IPv6 address IID	
	containing NH field	
	indicating value '2'	
containing HT field		
	indicating value'2'	
	containing LT field	
indicating value '0'		
	containing TC field	
	indicating a value derived from the IPv6 packet's Priority field (see note)	
carrying t	ne IPv6 packet received from Upper Layer as payload	
}		
}		
NOTE: See table	1 of TS 102 636-6-1 [1] for derivation mapping.	

# 5.2.2 Message Reception

### 5.2.2.1 GVL

TP Id	TP/IPv6GEO/MR/GVL/BV/01		
Test objective	Checks handling of a received IPv6 Multicast message, which has destination area		
	corresponding to an existing GVL associated to an Ethernet V2.0/IEEE 802.3 [7] LAN type		
	virtual interface of the IUT		
Reference	TS 102 636-6-1 [1], clause 8.2.2		
PICS Selection	PICS Selection PICS_GVL and PICS_Ethernet		
	Initial conditions		
with {			
the IUT having re	ceived a GeoBroadcast message		
	ICMPv6 Router Advertisment (RA) message		
	utomatically configured a GVL (GVL1) derived from the received RA and,		
	ceived several GeoBroadcast messages		
	ferent destination area from each others		
	ICMPv6 Router Advertisment (RA) message		
	utomatically configured GVLs (GVL2 GVLx) derived from each received RA		
the IUT's Upper L	ayer being automatically configured to use the virtual interface associated with each GVLs		
}			
	Expected behaviour		
ensure that {			
when {			
the IUT receiv	ves a GeoBroadcast message		
containing	Destination Area parameters corresponding to GVL1 and		
containing			
indicat	indicating an IPv6 multicast packet		
}			
then {			
	the IUT transmits on the virtual interface associated to GVL1 an Ethernet packet		
	containing Destination MAC address		
	indicating the broadcast value		
containing Source MAC address			
indicating a value derived from Source GN_ADDR field (see note)			
containing Ether Type value			
indicating IPv6			
containing	IPv6 payload		
}			
}			
NOTE: Reverse E	UI-64 generation procedure.		

TP/IPv6GEO/MR/GVL/BV/02
Checks handling of a received IPv6 Multicast message, which has destination area not
corresponding to any existing GVL of the IUT
TS 102 636-6-1 [1], clause 8.2.2
PICS_GVL and PICS_Ethernet
Initial conditions
ceived several GeoBroadcast messages
erent destination area from each others
ICMPv6 Router Advertisment (RA) message
tomatically configured GVLs (GVL1 GVLx) derived from each received RA
ayer being automatically configured to use the virtual interface associated with each GVLs
Expected behaviour
res a GeoBroadcast message
Destination Area parameters not corresponding to any GVLs and
payload
ing an IPv6 multicast packet
not pass the received IPv6 message to the Upper Layer through any virtual interface
TP/IPv6GEO/MR/GVL/BV/03

I P Id	IP/IPv6GEO/MR/GVL/BV/03		
Test objective	Checks handling of a received IPv6 Anycast message, which has destination area		
	corresponding to an existing GVL associated to an Ethernet V2.0/IEEE 802.3 LAN type virtual		
	interface of the IUT		
Reference	TS 102 636-6-1 [1], clause 8.2.2		
PICS Selection	PICS_GVL and PICS_Ethernet		
	Initial conditions		
with {			
the IUT having re	ceived several GeoBroadcast messages		
containing diff	ferent destination area from each others		
	ICMPv6 Router Advertisment (RA) message		
	utomatically configured GVLs (GVL1 GVLx) derived from each received RA		
the IUT's Upper L	the IUT's Upper Layer being automatically configured to use the virtual interface associated with each GVLs		
}			
	Expected behaviour		
ensure that {			
when {			
	/es a GeoAnycast message		
	Destination Area parameters corresponding to GVL1 and		
containing			
indicat	ing an IPv6 anycast packet		
}			
then {			
	nits on the virtual interface associated to GVL1 an Ethernet packet		
0	Destination MAC address		
	indicating the multicast value corresponding to the IPv6 destination address		
	Source MAC address		
	ing a value derived from Source GN_ADDR field (see note)		
	Ether Type value		
	ing IPv6		
containing	IPv6 payload		
}			
NOTE: Reverse E	UI-64 generation procedure.		

TP ld	TP/IPv6GEO/MR/GVL/BV/04
Test objective	Checks handling of a received IPv6 Anycast message, which has destination area not
	corresponding to any existing GVL of the IUT
Reference	TS 102 636-6-1 [1], clause 8.2.2
PICS Selection	PICS_GVL and PICS_Ethernet
	Initial conditions
vith {	
the IUT having re	eceived several GeoBroadcast messages
containing di	fferent destination area from each others
containing ar	n ICMPv6 Router Advertisment (RA) message
the IUT having a	automatically configured GVLs (GVL1 GVLx) derived from each received RA
the IUT's Upper	Layer being automatically configured to use the virtual interface associated with each GVLs
	Expected behaviour
containin containin indica } then {	ives a GeoAnycast message g Destination Area parameters not corresponding to any GVLs and g payload ating an IPv6 multicast packet s not pass the received IPv6 message to the Upper Layer through any virtual interface
TP Id	TP/IPv6GEO/MR/GVL/BV/05
Test objective	Checks handling of a received Router Advertisement message, which has destination area corresponding to an existing GVL associated to an Ethernet V2.0/IEEE 802.3 [7] LAN type with a literface of the ULT.

	corresponding to an existing GVL associated to an Ethernet V2.0/IEEE 802.3 [7] LAN type		
	virtual interface of the IUT		
Reference	TS 102 636-6-1 [1], clause 8.2.2		
PICS Selection	PICS_GVL and PICS_Ethernet		
	Initial conditions		
with {			
	the IUT having received several GeoBroadcast messages containing different destination area from each others		
	ICMPv6 Router Advertisment (RA) message		
	itomatically configured GVLs (GVL1 GVLx) derived from each received RA		
the IUT's Upper L	the IUT's Upper Layer being automatically configured to use the virtual interface associated with each GVLs		
}			
	Expected behaviour		
ensure that {			
when {			
	res a GeoBroadcast message		
	Destination Area parameters corresponding to GVL1		
0	containing payload indicating an ICMPv6 RA packet		
indicati			
} then (			
then {			
	nits on the virtual interface associated to GVL1 an Ethernet packet		
	Destination MAC address		
indicati	ing '33:33:00:00:01'		
containing	containing Source MAC address		
indicati	ing a value derived from Source GN_ADDR field (see note)		
containing Ether Type value			
0	ing ICMPv6		
	ICMPv6 RA payload		
t د د د د د د د د د د د د د د د د د د د			
<i>J</i>			
	UII 64 generation procedure		
NOTE: Reverse E	UI-64 generation procedure.		

TP Id	TP/IPv6GEO/MR/GVL/BV/06
Test objective	Checks handling of a received Router Advertisement message, which has destination area not
	corresponding to any existing GVL of the IUT of the IUT
Reference	TS 102 636-6-1 [1], clause 8.2.2
PICS Selection	PICS_GVL and PICS_Ethernet
	Initial conditions
with {	
the IUT having r	eceived several GeoBroadcast messages
containing di	fferent destination area from each others
containing ar	n ICMPv6 Router Advertisment (RA) message
the IUT having a	nutomatically configured GVLs (GVL1 GVLx) derived from each received RA
the IUT's Upper	Layer being automatically configured to use the virtual interface associated with each GVLs
}	
	Expected behaviour
ensure that {	
when {	
the IUT recei	ives a GeoBroadcast message
containin	g Destination Area parameters not corresponding to any GVLs
	g payload
indica	iting an ICMPv6 RA packet
}	
then {	
	tes a new GVL and a new virtual interface associated to it
	smits on the virtual interface associated to the new GVL an Ethernet packet
	g Destination MAC address
	ating '33:33:00:00:00:01'
	g Source MAC address
	ting a value derived from Source GN_ADDR field (see note)
	g Ether Type value
	ating ICMPv6
containin	g ICMPv6 RA payload
}	
}	
NOTE: Reverse	EUI-64 generation procedure.

TP Id	TP/IPv6GEO/MR/GVL/BV/07	
Test objective	Checks handling of a received IPv6 Unicast message, which has source position and	
lest objective	destination address prefix corresponding to an existing GVL associated to an Ethernet	
	V2.0/IEEE 802.3 LAN type virtual interface of the IUT	
Reference	TS 102 636-6-1 [1], clause 8.2.2	
PICS Selection	PICS_GVL and PICS_Ethernet	
FICS Selection		
with {		
	ceived several GeoBroadcast messages	
	ferent destination area from each others with some destination area overlaps	
	ferent advertised address prefixes from each others	
	ICMPv6 Router Advertisment (RA) message	
	utomatically configured GVLs (GVL1 GVLx) derived from each received RA	
the IUT's Upper I	Layer being automatically configured to use the virtual interface associated with each GVLs	
}		
,	Expected behaviour	
ensure that {	·	
when {		
the IUT receiv	/es a GeoUnicast message	
	Source position coordinates contained in several GVL areas	
	an IPv6 unicast payload	
	ning a wider-scope destination address	
contai	ning a destination address prefix matching the address prefix associated to one GVL (GVLy)	
}		
then {		
	the IUT transmits on the virtual interface associated to GVLy an Ethernet packet	
	Destination MAC address	
	ing a value derived from the IUT's GN_ADDR field (see note)   Source MAC address	
	ing a value derived from Source GN_ADDR field (see note)	
containing Ether Type value indicating IPv6		
	I IPv6 unicast payload	
}		
}		
, NOTE: Reverse E	UI-64 generation procedure.	

TP Id	TP/IPv6GEO/MR/GVL/BV/08	
Test objective		
lest objective	Checks handling of a received IPv6 Unicast message, which has source position corresponding	
	to an existing GVL, but has different destination address prefix	
Reference	TS 102 636-6-1 [1], clause 8.2.2	
PICS Selection	PICS_GVL and PICS_Ethernet	
	Initial conditions	
with {		
the IUT having red	ceived several GeoBroadcast messages	
	erent destination area from each others with some destination area overlaps	
containing diff	containing different advertised address prefixes from each others	
containing an	ICMPv6 Router Advertisment (RA) message	
the IUT having au	the IUT having automatically configured GVLs (GVL1 GVLx) derived from each received RA	
the IUT's Upper L	ayer being automatically configured to use the virtual interface associated with each GVLs	
}		
	Expected behaviour	
ensure that {		
when {		
the IUT receiv	es a GeoUnicast message	
containing	Source position coordinates contained in several GVL areas	
containing	an IPv6 unicast payload	
contain	ing a wider-scope destination address	
contain	ing a destination address prefix not matching the address prefix associated to any GVL	
}		
then {		
the IUT does r	not pass the received IPv6 message to the Upper Layer through any virtual interface	
}		
}		
14		

TP Id	TP/IPv6GEO/MR/GVL/BV/09			
Test objective	Checks handling of a received IPv6 Unicast message, which has destination address prefix			
	corresponding to an existing GVL, but has a source position outside of the associated GVL			
	area			
Reference	e TS 102 636-6-1 [1], clause 8.2.2			
PICS Selection	tion PICS_GVL and PICS_Ethernet			
	Initial conditions			
with {				
	eceived several GeoBroadcast messages			
containing di	ferent destination area from each others			
	ferent advertised address prefixes from each others			
	n ICMPv6 Router Advertisment (RA) message			
	utomatically configured GVLs (GVL1 GVLx) derived from each received RA			
the IUT's Upper	Layer being automatically configured to use the virtual interface associated with each GVLs			
}				
	Expected behaviour			
ensure that {				
when {				
	ves a GeoUnicast message			
	g an IPv6 unicast payload			
	ning a wider-scope destination address			
	ning a destination address prefix matching the address prefix associated to one GVL (GVLy)			
containing	g Source position coordinates outside the GVLy area			
}				
then {				
the IUT does	not pass the received IPv6 message to the Upper Layer through any virtual interface			
}				
}				

### 5.2.2.2 TVL

TF	PId TP/IPv6GEO/MR/TVL/BV/01		
	bjective Checks handling of a received link-local IPv6 Unicast message, when using a TVL associated		
	to an NBMA type virtual interface		
<b>Reference</b> TS 102 636-6-1 [1], clause 8.2.2			
PICS Selection PICS_TLV and PICS_NBMA			
	Initial conditions		
with {			
the IU	T having a configured NBMA TVL (TVL1) and,		
the IU	T's Upper Layer being configured to use the virtual interface associated with TVL1		
}			
	Expected behaviour		
ensure that	·		
when			
the	e IUT receives a GeoUnicast message		
	containing an IPv6 unicast payload		
	containing a source address		
	indicating a link-local unicast address (FE80:: <iid>/10)</iid>		
}			
then { the IUT transmits on the virtual interface associated to TVL1 an Ethernet packet			
containing Destination MAC address indicating a value derived from the IUT's GN_ADDR field (see note)			
	indicating a value derived from Source GN_ADDR field (see note)		
	containing Ether Type value		
	indicating IPv6 containing IPv6 unicast payload		
١	containing it vo unicasi payioau		
ſ			
NOTE:	Reverse EUI-64 generation procedure.		
UTL.			

TP ld	TP/IPv6GEO/MR/TVL/BV/02		
Test objective	Checks handling of a received link-local IPv6 Unicast message, when using a TVL as		
	to an Point-to-Point type virtual interface		
Reference	TS 102 636-6-1 [1], clause 8.2.2		
PICS Selection	PICS_TLV and PICS_Point-to-Point		
	Initial conditions		
with {			
	configured Point-to-Point TVL (TVL1) and,		
the IUT's Upper	Layer being configured to use the virtual interface associated with TVL1		
}			
	Expected behaviour		
ensure that {			
when {			
the IUT recei	ves a GeoUnicast message		
	g an IPv6 unicast payload		
contai	ining a source address		
ind	dicating a link-local unicast address (FE80:: <iid>/10)</iid>		
}			
then {			
the IUT transmits on the virtual interface associated to TVL1 an IPv6 packet			
}			
3			

# 5.2.3 Virtual Interface Management

### 5.2.3.1 New virtual interfaces

TP ld	TP/IPv6GEO/VM/NVI/BV/01			
Test objective Checks the Router Advertisement-triggered creation of a new GVL associated to a				
	V2.0/IEEE 802.3 [7] LAN type virtual interface			
Reference	TS 102 636-6-1 [1], clause 8.2.2			
PICS Selection	PICS_GVL and PICS_Ethernet			
	Initial conditions			
with {				
the IUT having re	ceived several GeoBroadcast messages			
containing dif	erent destination area from each others			
	erent advertised address prefixes from each others			
containing an ICMPv6 Router Advertisment (RA) message				
	itomatically configured GVLs (GVL1 GVLx) derived from each received RA			
the IUT's Upper L	ayer being automatically configured to use the virtual interface associated with each GVLs			
}				
	Expected behaviour			
ensure that {				
when {				
the IUT receiv	res a GeoBroadcast message			
containing Destination Area parameters not corresponding to any GVLs				
containing	an ICMPv6 RA payload			
}				
then {				
	es a new GVL and associates to it a new virtual interface (VI1)			
	/AC address			
indicat	ing a value derived from the IUT's GN_ADDR (see note)			
}				
}				
NOTE: Reverse E	UI-64 generation procedure.			

TP ld	TP/IPv6GEO/VM/EVI/BV/01				
Test objective	Checks the removal of an expired GVL and its associated virtual interface				
Reference	TS 102 636-6-1 [1], clause 8.2.2				
PICS Selection	PICS_GVL and PICS_Ethernet				
Initial conditions					
with {					
the IUT having reco	eived a GeoBroadcast message				
containing several Prefix List entries (see note)					
containing an ICMPv6 Router Advertisment (RA) message					
the IUT having automatically configured a GVL (GVL1) derived from the received RA and					
the IUT's Upper Layer being automatically configured to use the virtual interface (VI1) associated with GVL1					
}					
	Expected behaviour				
ensure that {					
when {					
every prefix entry associated to GVL1 has expired					
}					
then {					
the IUT removes the expired GVL1					
the IUT removes the associated virtual interface VI1					
}					
}					
NOTE: Each Prefix	List entry has an expiration time.				

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### 5.2.3.2 Expired virtual interfaces

• ETSI TS 102 636-1: "Intelligent Transport Systems (ITS); Vehicular Communications; GeoNetworking; Part 1: Requirements".

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- ETSI TS 102 636-2: "Intelligent Transport Systems (ITS); Vehicular Communications; GeoNetworking; Part 2: Scenarios".
- ETSI TS 102 636-3: "Intelligent Transport Systems (ITS); Vehicular Communications; GeoNetworking; Part 3: Network architecture".
- ETSI TS 102 859-1: "Intelligent Transport Systems (ITS); Testing; Conformance test specifications for Transmission of IP packets over GeoNetworking; Part 1: Test requirements and Protocol Implementation Conformance Statement (PICS) proforma".
- "GeoNet STREP N 216269 D2.2 Final GeoNet Specification".

# History

Document history					
V1.1.1	March 2011	Publication			

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