

---

Stream: Internet Engineering Task Force (IETF)  
RFC: [8675](#)  
Category: Standards Track  
Published: November 2019  
ISSN: 2070-1721  
Authors: M. Boucadair I. Farrer R. Asati  
*Orange Deutsche Telekom AG Cisco Systems, Inc.*

# RFC 8675

## A YANG Data Model for Tunnel Interface Types

---

### Abstract

This document specifies the initial version of a YANG module "iana-tunnel-type", which contains a collection of IANA-maintained YANG identities used as interface types for tunnel interfaces. The module reflects the "tunnelType" registry maintained by IANA. The latest revision of this YANG module can be obtained from the IANA website.

Tunnel type values are not directly added to the Tunnel Interface Types YANG module; they must instead be added to the "tunnelType" IANA registry. Once a new tunnel type registration is made by IANA for a new tunneling scheme or even an existing one that is not already listed in the current registry (e.g., LISP, NSH), IANA will update the Tunnel Interface Types YANG module accordingly.

Some of the IETF-defined tunneling techniques are not listed in the current IANA registry. It is not the intent of this document to update the existing IANA registry with a comprehensive list of tunnel technologies. Registrants must follow the IETF registration procedure for interface types whenever a new tunnel type is needed.

### Status of This Memo

This is an Internet Standards Track document.

This document is a product of the Internet Engineering Task Force (IETF). It represents the consensus of the IETF community. It has received public review and has been approved for publication by the Internet Engineering Steering Group (IESG). Further information on Internet Standards is available in Section 2 of RFC 7841.

Information about the current status of this document, any errata, and how to provide feedback on it may be obtained at <https://www.rfc-editor.org/info/rfc8675>.

## Copyright Notice

Copyright (c) 2019 IETF Trust and the persons identified as the document authors. All rights reserved.

This document is subject to BCP 78 and the IETF Trust's Legal Provisions Relating to IETF Documents (<https://trustee.ietf.org/license-info>) in effect on the date of publication of this document. Please review these documents carefully, as they describe your rights and restrictions with respect to this document. Code Components extracted from this document must include Simplified BSD License text as described in Section 4.e of the Trust Legal Provisions and are provided without warranty as described in the Simplified BSD License.

## Table of Contents

- [1. Introduction](#)
- [2. IANA Tunnel Type YANG Module](#)
- [3. Security Considerations](#)
- [4. IANA Considerations](#)
  - [4.1. YANG Module](#)
  - [4.2. Updates to the IANA tunnelType Table](#)
- [5. References](#)
  - [5.1. Normative References](#)
  - [5.2. Informative References](#)
- [Appendix A. Example Usage](#)
- [Acknowledgements](#)
- [Authors' Addresses](#)

## 1. Introduction

This document specifies the initial version of the iana-tunnel-type YANG module containing a collection of IANA-maintained YANG identities identifying tunnel interface types. The module reflects IANA's tunnelType registry under the SMI Numbers registry [[TUNNELTYPE-IANA-REGISTRY](#)]. The latest revision of this module can be obtained from the IANA website.

Tunnel-specific extensions may be added to the Interface module [[RFC8343](#)] as a function of the tunnel type. An example of this is provided in [Appendix A](#). It is not the intention of this document to define tunnel-specific extensions for every tunnel encapsulation technology; those are discussed in dedicated documents such as [[RFC8676](#)]. Likewise, it is out of the scope of this document to update the existing IANA tunnelType registry [[TUNNELTYPE-IANA-REGISTRY](#)] with a comprehensive list of tunnel technologies. Guidelines and registration procedures for interface types and sub-types are discussed in [[IFTYPE-REG](#)].

This document uses the common YANG types defined in [[RFC6991](#)] and adopts the Network Management Datastore Architecture (NMDA [[RFC8342](#)]).

The terminology for describing YANG modules is defined in [[RFC7950](#)]. The meanings of the symbols used in the tree diagram are defined in [[RFC8340](#)].

## 2. IANA Tunnel Type YANG Module

The iana-tunnel-type module imports the 'iana-if-type' module defined in [\[RFC7224\]](#).

The initial version of the module includes tunnel types defined in [\[RFC4087\]](#), [\[RFC7856\]](#), [\[RFC7870\]](#), and [\[RFC6346\]](#).

```
<CODE BEGINS> file "iana-tunnel-type@2019-11-16.yang"

module iana-tunnel-type {
  yang-version 1.1;
  namespace "urn:ietf:params:xml:ns:yang:iana-tunnel-type";
  prefix iana-tunnel-type;

  import iana-if-type {
    prefix ift;
    reference
      "RFC 7224: IANA Interface Type YANG Module";
  }

  organization
    "IANA";
  contact
    "Internet Assigned Numbers Authority

    Postal: ICANN
           12025 Waterfront Drive, Suite 300
           Los Angeles, CA 90094-2536
           United States of America
    Tel:   +1 310 301 5800
    <mailto:iana@iana.org>";
  description
    "This module contains a collection of YANG identities defined
    by IANA and used as interface types for tunnel interfaces.

    Copyright (c) 2019 IETF Trust and the persons identified as
    authors of the code. All rights reserved.

    Redistribution and use in source and binary forms, with or
    without modification, is permitted pursuant to, and subject
    to the license terms contained in, the Simplified BSD License
    set forth in Section 4.c of the IETF Trust's Legal Provisions
    Relating to IETF Documents
    (https://trustee.ietf.org/license-info).

    This version of this YANG module is part of RFC 8675; see
    the RFC itself for full legal notices.";

  revision 2019-11-16 {
    description
      "Initial revision.";
    reference
      "RFC 8675: A YANG Data Model for Tunnel Interface Types";
  }

  identity other {
    base ift:tunnel;
    description
      "None of the following values.";
    reference
      "RFC 4087: IP Tunnel MIB";
  }

  identity direct {
```

```
base ift:tunnel;
description
  "No intermediate header.";
reference
  "RFC 2003: IP Encapsulation within IP
   RFC 4213: Basic Transition Mechanisms for IPv6 Hosts
   and Routers";
}

identity gre {
base ift:tunnel;
description
  "GRE encapsulation.";
reference
  "RFC 1701: Generic Routing Encapsulation (GRE)
   RFC 1702: Generic Routing Encapsulation over IPv4 networks
   RFC 7676: IPv6 Support for Generic Routing Encapsulation
   (GRE)";
}

identity minimal {
base ift:tunnel;
description
  "Minimal encapsulation.";
reference
  "RFC 2004: Minimal Encapsulation within IP";
}

identity l2tp {
base ift:tunnel;
description
  "L2TP encapsulation.";
reference
  "RFC 2661: Layer Two Tunneling Protocol 'L2TP'";
}

identity pptp {
base ift:tunnel;
description
  "PPTP encapsulation.";
reference
  "RFC 2637: Point-to-Point Tunneling Protocol (PPTP)";
}

identity l2f {
base ift:tunnel;
description
  "L2F encapsulation.";
reference
  "RFC 2341: Cisco Layer Two Forwarding (Protocol) 'L2F'";
}

identity udp {
base ift:tunnel;
description
  "UDP encapsulation.";
reference
  "RFC 1234: Tunneling IPX Traffic through IP Networks,
```

```
    RFC 8085: UDP Usage Guidelines, Section 3.1.11";
}

identity atmp {
    base ift:tunnel;
    description
        "ATMP encapsulation.";
    reference
        "RFC 2107: Ascend Tunnel Management Protocol - ATMP";
}

identity msdp {
    base ift:tunnel;
    description
        "MSDP encapsulation.";
    reference
        "RFC 3618: Multicast Source Discovery Protocol (MSDP)";
}

identity sixtofour {
    base ift:tunnel;
    description
        "6to4 encapsulation.";
    reference
        "RFC 3056: Connection of IPv6 Domains via IPv4 Clouds";
}

identity sixoverfour {
    base ift:tunnel;
    description
        "6over4 encapsulation.";
    reference
        "RFC 2529: Transmission of IPv6 over IPv4 Domains without
            Explicit Tunnels";
}

identity isatap {
    base ift:tunnel;
    description
        "ISATAP encapsulation.";
    reference
        "RFC 5214: Intra-Site Automatic Tunnel Addressing Protocol
            (ISATAP)";
}

identity teredo {
    base ift:tunnel;
    description
        "Teredo encapsulation.";
    reference
        "RFC 4380: Teredo: Tunneling IPv6 over UDP through
            Network Address Translations (NATs)";
}

identity iphttps {
    base ift:tunnel;
    description
        "IP over HTTPS (IP-HTTPS) Tunneling Protocol.";
```

```
reference
  "Microsoft Corporation, IP over HTTPS (IP-HTTPS) Tunneling
  Protocol Specification,
  https://msdn.microsoft.com/en-us/library/dd358571.aspx";
}

identity softwiremesh {
  base ift:tunnel;
  description
    "softwire mesh tunnel.";
  reference
    "RFC 5565: Softwire Mesh Framework";
}

identity dslite {
  base ift:tunnel;
  description
    "DS-Lite tunnel.";
  reference
    "RFC 6333: Dual-Stack Lite Broadband Deployments Following
    IPv4 Exhaustion";
}

identity aplusp {
  base ift:tunnel;
  description
    "A+P encapsulation.";
  reference
    "RFC 6346: The Address plus Port (A+P) Approach to the IPv4
    Address Shortage";
}
}
}

<CODE ENDS>
```

### 3. Security Considerations

The YANG module specified in this document defines a schema for data that is designed to be accessed via network management protocols such as NETCONF [RFC6241] or RESTCONF [RFC8040]. The lowest NETCONF layer is the secure transport layer, and the mandatory-to-implement secure transport is Secure Shell (SSH) [RFC6242]. The lowest RESTCONF layer is HTTPS, and the mandatory-to-implement secure transport is TLS [RFC8446].

The Network Configuration Access Control Model (NACM) [RFC8341] provides the means to restrict access for particular NETCONF or RESTCONF users to a preconfigured subset of all available NETCONF or RESTCONF protocol operations and content.

The module defined in this document defines YANG identities for the iana-tunnel-types registry. These identities are intended to be referenced by other YANG modules, and by themselves do not expose any nodes which are writable, contain read-only state, or RPCs. As such, there are no additional security issues to be considered relating to the module defined in this document.



## 4. IANA Considerations

### 4.1. YANG Module

IANA has registered the following URI in the "ns" subregistry within the "IETF XML Registry" [[RFC3688](#)]:

URI: urn:ietf:params:xml:ns:yang:iana-tunnel-type  
Registrant Contact: IANA  
XML: N/A; the requested URI is an XML namespace.

IANA registered the following YANG module in the "YANG Module Names" subregistry [[RFC7950](#)] within the "YANG Parameters" registry.

Name: iana-tunnel-type  
Namespace: urn:ietf:params:xml:ns:yang:iana-tunnel-type  
Prefix: iana-tunnel-type  
Reference: RFC 8675

This document defines the initial version of the IANA-maintained iana-tunnel-type YANG module. IANA has added this note to the registry:

Tunnel type values must not be directly added to the iana-tunnel-type YANG module. They must instead be added to the "tunnelType" subregistry (under the "ifType definitions" registry) at [IANA registry smi-numbers].

When a tunnel type is added to the "tunnelType" subregistry, a new "identity" statement must be added to the iana-tunnel-type YANG module. The name of the "identity" is the lower-case of the corresponding enumeration in the IANAifType-MIB (i.e., IANAtunnelType). The "identity" statement should have the following sub-statements defined:

"base": Contains 'ift:tunnel'.  
"description": Replicates the description from the registry.  
"reference": Replicates the reference from the registry and adds the title of the document.

Unassigned or reserved values are not present in the module.

When the iana-tunnel-type YANG module is updated, a new "revision" statement must be added in front of the existing revision statements.

IANA has added the following note to "tunnelType" subregistry:

When this registry is modified, the YANG module iana-tunnel-type must be updated as defined in RFC 8675.

## 4.2. Updates to the IANA tunnelType Table

IANA has updated the following entries in the tunnelType registry under the SMI Numbers registry [[TUNNELTYPE-IANA-REGISTRY](#)].

OLD:

Decimal	Name	Description	References
2	direct	no intermediate header	[RFC4087]
3	gre	GRE encapsulation	[RFC4087]
4	minimal	Minimal encapsulation	[RFC4087]
5	l2tp	L2TP encapsulation	[RFC4087]
6	pptp	PPTP encapsulation	[RFC4087]
7	l2f	L2F encapsulation	[RFC4087]
8	udp	UDP encapsulation	[RFC4087]
9	atmp	ATMP encapsulation	[RFC4087]
10	msdp	MSDP encapsulation	[RFC4087]
11	sixToFour	6to4 encapsulation	[RFC4087]
12	sixOverFour	6over4 encapsulation	[RFC4087]
13	isatap	ISATAP encapsulation	[RFC4087]
14	teredo	Teredo encapsulation	[RFC4087]
16	softwareMesh	software mesh tunnel	[RFC7856]
17	dsLite	DS-Lite tunnel	[RFC7870]

Table 1

NEW:

Decimal	Name	Description	References
2	direct	no intermediate header	[RFC2003][RFC4213]
3	gre	GRE encapsulation	[RFC1701][RFC1702][RFC7676]
4	minimal	Minimal encapsulation	[RFC2004]

Decimal	Name	Description	References
5	l2tp	L2TP encapsulation	[RFC2661]
6	pptp	PPTP encapsulation	[RFC2637]
7	l2f	L2F encapsulation	[RFC2341]
8	udp	UDP encapsulation	[RFC8085]
9	atmp	ATMP encapsulation	[RFC2107]
10	msdp	MSDP encapsulation	[RFC3618]
11	sixToFour	6to4 encapsulation	[RFC3056]
12	sixOverFour	6over4 encapsulation	[RFC2529]
13	isatap	ISATAP encapsulation	[RFC5214]
14	teredo	Teredo encapsulation	[RFC4380]
16	softwareMesh	software mesh tunnel	[RFC5565]
17	dsLite	DS-Lite tunnel	[RFC6333]

Table 2

## 5. References

### 5.1. Normative References

- [RFC3688] Mealling, M., "The IETF XML Registry", BCP 81, RFC 3688, DOI 10.17487/RFC3688, January 2004, <<https://www.rfc-editor.org/info/rfc3688>>.
- [RFC6241] Enns, R., Ed., Bjorklund, M., Ed., Schoenwaelder, J., Ed., and A. Bierman, Ed., "Network Configuration Protocol (NETCONF)", RFC 6241, DOI 10.17487/RFC6241, June 2011, <<https://www.rfc-editor.org/info/rfc6241>>.
- [RFC6242] Wasserman, M., "Using the NETCONF Protocol over Secure Shell (SSH)", RFC 6242, DOI 10.17487/RFC6242, June 2011, <<https://www.rfc-editor.org/info/rfc6242>>.
- [RFC6991] Schoenwaelder, J., Ed., "Common YANG Data Types", RFC 6991, DOI 10.17487/RFC6991, July 2013, <<https://www.rfc-editor.org/info/rfc6991>>.
- [RFC7224] Bjorklund, M., "IANA Interface Type YANG Module", RFC 7224, DOI 10.17487/RFC7224, May 2014, <<https://www.rfc-editor.org/info/rfc7224>>.
- [RFC7950]

Bjorklund, M., Ed., "The YANG 1.1 Data Modeling Language", RFC 7950, DOI 10.17487/RFC7950, August 2016, <<https://www.rfc-editor.org/info/rfc7950>>.

**[RFC8040]** Bierman, A., Bjorklund, M., and K. Watsen, "RESTCONF Protocol", RFC 8040, DOI 10.17487/RFC8040, January 2017, <<https://www.rfc-editor.org/info/rfc8040>>.

**[RFC8341]** Bierman, A. and M. Bjorklund, "Network Configuration Access Control Model", STD 91, RFC 8341, DOI 10.17487/RFC8341, March 2018, <<https://www.rfc-editor.org/info/rfc8341>>.

**[RFC8342]** Bjorklund, M., Schoenwaelder, J., Shafer, P., Watsen, K., and R. Wilton, "Network Management Datastore Architecture (NMDA)", RFC 8342, DOI 10.17487/RFC8342, March 2018, <<https://www.rfc-editor.org/info/rfc8342>>.

**[RFC8446]** Rescorla, E., "The Transport Layer Security (TLS) Protocol Version 1.3", RFC 8446, DOI 10.17487/RFC8446, August 2018, <<https://www.rfc-editor.org/info/rfc8446>>.

**[TUNNELTYPE-IANA-REGISTRY]** IANA, "Structure of Management Information (SMI) Numbers (MIB Module Registrations)", <<https://www.iana.org/assignments/smi-numbers>>.

## 5.2. Informative References

**[IFTYPE-REG]** Thaler, D. and D. Romascanu, "Guidelines and Registration Procedures for Interface Types and Tunnel Types", Work in Progress, Internet-Draft, draft-thaler-iftypereg-06, 2 November 2019, <<https://tools.ietf.org/html/draft-thaler-iftypereg-06>>.

**[RFC1701]** Hanks, S., Li, T., Farinacci, D., and P. Traina, "Generic Routing Encapsulation (GRE)", RFC 1701, DOI 10.17487/RFC1701, October 1994, <<https://www.rfc-editor.org/info/rfc1701>>.

**[RFC1702]** Hanks, S., Li, T., Farinacci, D., and P. Traina, "Generic Routing Encapsulation over IPv4 networks", RFC 1702, DOI 10.17487/RFC1702, October 1994, <<https://www.rfc-editor.org/info/rfc1702>>.

**[RFC2003]** Perkins, C., "IP Encapsulation within IP", RFC 2003, DOI 10.17487/RFC2003, October 1996, <<https://www.rfc-editor.org/info/rfc2003>>.

**[RFC2004]** Perkins, C., "Minimal Encapsulation within IP", RFC 2004, DOI 10.17487/RFC2004, October 1996, <<https://www.rfc-editor.org/info/rfc2004>>.

**[RFC2107]** Hamzeh, K., "Ascend Tunnel Management Protocol - ATMP", RFC 2107, DOI 10.17487/RFC2107, February 1997, <<https://www.rfc-editor.org/info/rfc2107>>.

**[RFC2341]** Valencia, A., Littlewood, M., and T. Kolar, "Cisco Layer Two Forwarding (Protocol) "L2F"", RFC 2341, DOI 10.17487/RFC2341, May 1998, <<https://www.rfc-editor.org/info/rfc2341>>.

**[RFC2529]**

- Carpenter, B. and C. Jung, "Transmission of IPv6 over IPv4 Domains without Explicit Tunnels", RFC 2529, DOI 10.17487/RFC2529, March 1999, <<https://www.rfc-editor.org/info/rfc2529>>.
- [RFC2637] Hamzeh, K., Pall, G., Verthein, W., Taarud, J., Little, W., and G. Zorn, "Point-to-Point Tunneling Protocol (PPTP)", RFC 2637, DOI 10.17487/RFC2637, July 1999, <<https://www.rfc-editor.org/info/rfc2637>>.
- [RFC2661] Townsley, W., Valencia, A., Rubens, A., Pall, G., Zorn, G., and B. Palter, "Layer Two Tunneling Protocol "L2TP"", RFC 2661, DOI 10.17487/RFC2661, August 1999, <<https://www.rfc-editor.org/info/rfc2661>>.
- [RFC3056] Carpenter, B. and K. Moore, "Connection of IPv6 Domains via IPv4 Clouds", RFC 3056, DOI 10.17487/RFC3056, February 2001, <<https://www.rfc-editor.org/info/rfc3056>>.
- [RFC3618] Fenner, B., Ed. and D. Meyer, Ed., "Multicast Source Discovery Protocol (MSDP)", RFC 3618, DOI 10.17487/RFC3618, October 2003, <<https://www.rfc-editor.org/info/rfc3618>>.
- [RFC4087] Thaler, D., "IP Tunnel MIB", RFC 4087, DOI 10.17487/RFC4087, June 2005, <<https://www.rfc-editor.org/info/rfc4087>>.
- [RFC4213] Nordmark, E. and R. Gilligan, "Basic Transition Mechanisms for IPv6 Hosts and Routers", RFC 4213, DOI 10.17487/RFC4213, October 2005, <<https://www.rfc-editor.org/info/rfc4213>>.
- [RFC4380] Huitema, C., "Teredo: Tunneling IPv6 over UDP through Network Address Translations (NATs)", RFC 4380, DOI 10.17487/RFC4380, February 2006, <<https://www.rfc-editor.org/info/rfc4380>>.
- [RFC5214] Templin, F., Gleeson, T., and D. Thaler, "Intra-Site Automatic Tunnel Addressing Protocol (ISATAP)", RFC 5214, DOI 10.17487/RFC5214, March 2008, <<https://www.rfc-editor.org/info/rfc5214>>.
- [RFC5565] Wu, J., Cui, Y., Metz, C., and E. Rosen, "Softwire Mesh Framework", RFC 5565, DOI 10.17487/RFC5565, June 2009, <<https://www.rfc-editor.org/info/rfc5565>>.
- [RFC6333] Durand, A., Droms, R., Woodyatt, J., and Y. Lee, "Dual-Stack Lite Broadband Deployments Following IPv4 Exhaustion", RFC 6333, DOI 10.17487/RFC6333, August 2011, <<https://www.rfc-editor.org/info/rfc6333>>.
- [RFC6346] Bush, R., Ed., "The Address plus Port (A+P) Approach to the IPv4 Address Shortage", RFC 6346, DOI 10.17487/RFC6346, August 2011, <<https://www.rfc-editor.org/info/rfc6346>>.
- [RFC7676] Pignataro, C., Bonica, R., and S. Krishnan, "IPv6 Support for Generic Routing Encapsulation (GRE)", RFC 7676, DOI 10.17487/RFC7676, October 2015, <<https://www.rfc-editor.org/info/rfc7676>>.
- [RFC7856]

Cui, Y., Dong, J., Wu, P., Xu, M., and A. Yla-Jaaski, "Softwire Mesh Management Information Base (MIB)", RFC 7856, DOI 10.17487/RFC7856, May 2016, <<https://www.rfc-editor.org/info/rfc7856>>.

- [RFC7870] Fu, Y., Jiang, S., Dong, J., and Y. Chen, "Dual-Stack Lite (DS-Lite) Management Information Base (MIB) for Address Family Transition Routers (AFTRs)", RFC 7870, DOI 10.17487/RFC7870, June 2016, <<https://www.rfc-editor.org/info/rfc7870>>.
- [RFC8085] Eggert, L., Fairhurst, G., and G. Shepherd, "UDP Usage Guidelines", BCP 145, RFC 8085, DOI 10.17487/RFC8085, March 2017, <<https://www.rfc-editor.org/info/rfc8085>>.
- [RFC8340] Bjorklund, M. and L. Berger, Ed., "YANG Tree Diagrams", BCP 215, RFC 8340, DOI 10.17487/RFC8340, March 2018, <<https://www.rfc-editor.org/info/rfc8340>>.
- [RFC8343] Bjorklund, M., "A YANG Data Model for Interface Management", RFC 8343, DOI 10.17487/RFC8343, March 2018, <<https://www.rfc-editor.org/info/rfc8343>>.
- [RFC8676] Farrer, I., Ed. and M. Boucadair, Ed., "YANG Modules for IPv4-in-IPv6 Address plus Port (A+P) Softwires", RFC 8676, DOI 10.17487/RFC8676, November 2019, <<https://www.rfc-editor.org/info/rfc8676>>.

## Appendix A. Example Usage

The following example illustrates how the Interface YANG module can be augmented with tunnel-specific parameters. In this example, the module is augmented with a 'remote-endpoint' for the tunnel. A tree structure is provided below:

```
module: example-iftunnel-extension
  augment /if:interfaces/if:interface:
    +--rw remote-endpoint?  inet:ipv6-address
```

The 'example-iftunnel-extension' module imports the modules defined in [RFC6991] and [RFC8343] in addition to the "iana-tunnel-type" module defined in this document.

```
module example-iftunnel-extension {
  yang-version 1.1;

  namespace "urn:ietf:params:xml:ns:yang:example-iftunnel-extension";
  prefix example;

  import ietf-inet-types {
    prefix inet;
    reference
      "RFC 6991: Common YANG Data Types, Section 4";
  }

  import ietf-interfaces {
    prefix if;
    reference
      "RFC 8343: A YANG Data Model for Interface Management";
  }

  import iana-tunnel-type {
    prefix iana-tunnel-type;
    reference
      "RFC 8675: A Tunnel Extension to the Interface Management
      YANG Module";
  }

  organization "IETF Softwire Working Group";

  contact
    "WG Web: <https://datatracker.ietf.org/wg/softwire/>
    WG List: <mailto:softwire@ietf.org>

    Author: Mohamed Boucadair
    <mailto:mohamed.boucadair@orange.com>";

  description
    "This is an example YANG module to extend the Interface YANG
    module with tunnel-specific parameters.

    Copyright (c) 2019 IETF Trust and the persons identified as
    authors of the code. All rights reserved.

    Redistribution and use in source and binary forms, with or
    without modification, is permitted pursuant to, and subject
    to the license terms contained in, the Simplified BSD License
    set forth in Section 4.c of the IETF Trust's Legal Provisions
    Relating to IETF Documents
    (http://trustee.ietf.org/license-info)."

    This version of this YANG module is part of RFC 8675; see
    the RFC itself for full legal notices.";

  revision 2019-10-21 {
    description
      "Initial revision.";
    reference
      "RFC 8675: Tunnel Interface Types YANG Module";
  }
}
```

```
    }  
  
    augment "/if:interfaces/if:interface" {  
      when "derived-from(if:type, 'iana-tunnel-type:gre')";  
      description  
        "Augments Interface module with specific tunnel parameters.";  
  
      leaf remote-endpoint {  
        type inet:ipv6-address;  
        description  
          "IPv6 address of the remote GRE endpoint.";  
      }  
    }  
  }  
}
```

## Acknowledgements

Special thanks to Tom Petch and Martin Bjorklund for the detailed review and suggestions.

Thanks to Andy Bierman for the Yangdoctors review.

Thanks to Dale Worley, David Black, and Yaron Sheffer for the review.

## Authors' Addresses

### Mohamed Boucadair

Orange  
35000 Rennes  
France  
Email: [mohamed.boucadair@orange.com](mailto:mohamed.boucadair@orange.com)

### Ian Farrer

Deutsche Telekom AG  
CTO-ATI, Landgrabenweg 151  
53227 Bonn  
Germany  
Email: [ian.farrer@telekom.de](mailto:ian.farrer@telekom.de)

### Rajiv Asati

Cisco Systems, Inc.  
7025 Kit Creek Rd.  
RTP, NC 27709  
United States of America  
Email: [Rajiva@cisco.com](mailto:Rajiva@cisco.com)