

# Guidelines and Registration Procedures for Interface Types draft-thaler-iftypereg-01

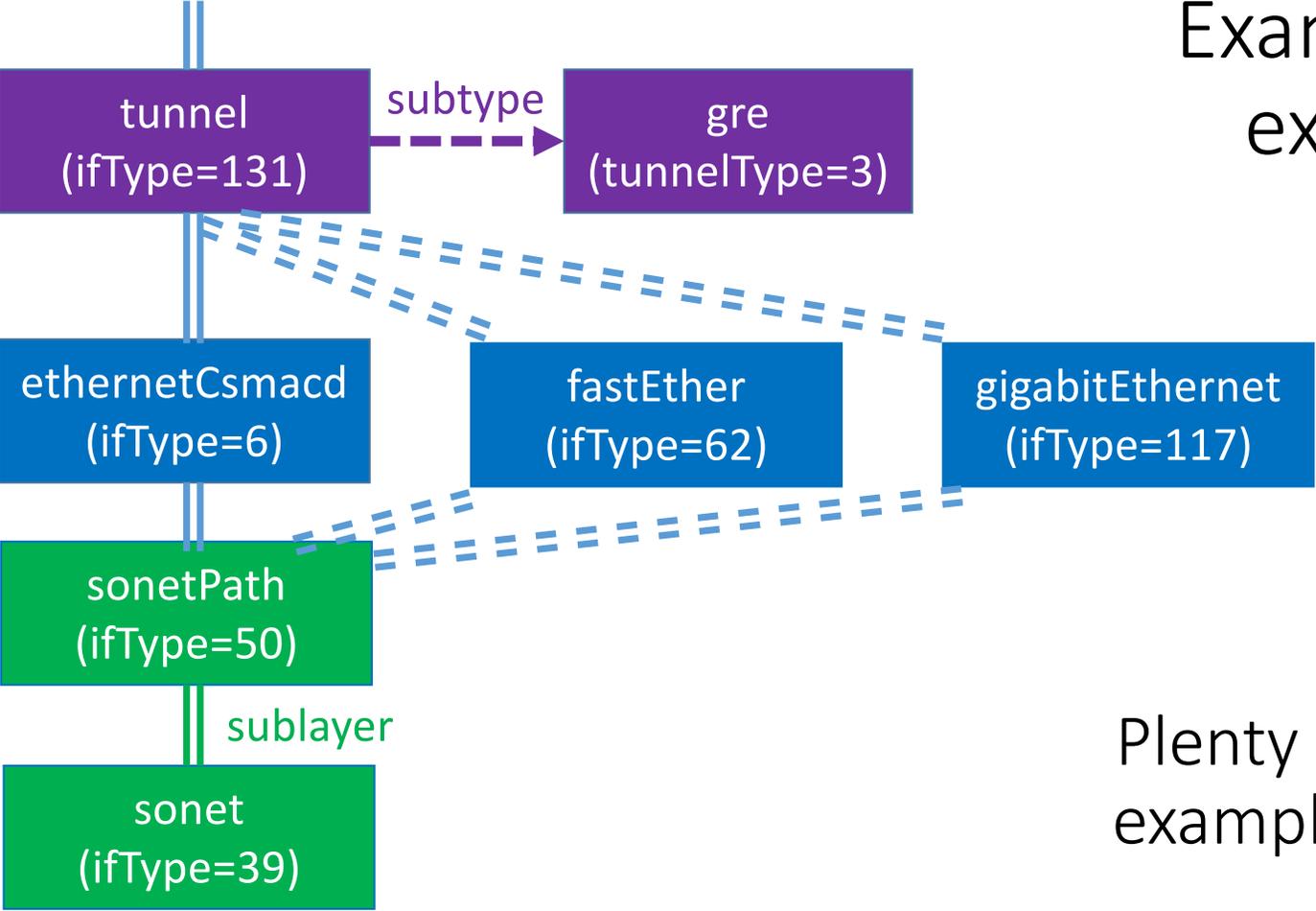
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# Interface Type registry background

- Integer IDs of layer-2 link types (Ethernet, WiFi, etc.)
  - ifType values originally defined in MIB-II (RFC 1213)
- Registry most recently defined by RFC 2863 from IFMIB WG in 2000
  - Requires **Expert Review** (Dave Thaler and Dan Romascanu are current ones)
  - Predates IANA Considerations sections and RFC 8126 on Expert review
- Since 2005, also includes IANAtunnelType defined in RFC 4087 by IFMIB WG
  - ifType 131 (tunnel) has subtype per <foo>-over-IP tunnel protocol
  - Same process and experts as IANAifType
- Currently 296 ifType values and 18 tunnel type values
- Draft addresses issues raised over recent years

Examples from existing RFCs



alternate values

Plenty of non-IETF examples exist too

# Issue #1: non-MIB usage

- RFCs written before YANG and only mention MIB modules
  - The registry itself is maintained as a MIB module
- RFC 7224 (IANA Interface Type YANG Module) updated registry to *also* be maintained as a YANG module
- Draft clarifies that:
  - ifType values are not tied to any specific management mechanism
    - Can be used with MIB modules, YANG modules, or anything else
    - Can also be used without any MIB or YANG module
  - Examples of current uses
    - Values of MIB/YANG objects
    - Parts of unique identifier (e.g., OID) for data model objects
    - Values exposed by APIs on a device
    - Values displayed by UI / CLI

## Issue #2: sub-layer/sub-type guidance

- Added clarifying guidance regarding defining sublayers vs subtypes
  - **Sublayer:** if dynamic relationship or multiplexing relationship exists with next lower layer ifType instances
  - **Subtype:** not a layering (only one entry in the ifTable) but want to extend with subclass-like information
- Problem #1: if an ifType value is not sufficiently complete to allow interop, it can be unclear whether definers intend a sublayer or subtype model, which leads to...
- Problem #2: what should Expert do if someone else (e.g., a vendor) then asks for a sublayer or subtype of it?

# Proposed new guidance text

- The intent of an **interface type or sub-type** is that its definition **should be sufficient to identify an interoperable protocol**.
- In some cases, a protocol might be defined in a way that is not sufficient to provide interoperability with other compliant implementations of that protocol.
  - In such a case, an ifType definition should **discuss whether** specific instantiations (or profiles) of behavior should use a **sub-layer model** (e.g., each vendor might layer the protocol over its own sub-layer that provides the missing details), **or a sub-type model** (i.e., each vendor might subclass the protocol without any layering relationship).
- If a sub-type model is more appropriate, then the **data model for the protocol might include a sub-type identifier** so that management software can discover objects specific to the subtype.
- In either case, such discussion is important to guide definers of a data model for the more specific information (i.e., a lower sub-layer or a subtype), as well as the Designated Expert that must review requests for any such ifTypes or sub-types.

## Issue #3: mechanical process for verifying registry syntax correctness

- Registry sometimes contained syntax errors in MIB or YANG encoding of values
  - Since registry is an actual MIB/YANG module, this breaks tools that reference them
- Tools already exist to verify MIB/YANG module syntax validity
- Added step to IANA process to verify syntax validity

## Issue #4: transmission values

- “transmission” value registry is a subset of ifTypes, usually with same value
  - E.g., used in OIDs that point to MIB modules for the ifType
- No guidance on whether an ifType allocation should also get a transmission value or not, if requester didn’t ask for one
- IANA has been asking Designated Experts to decide on a case by case basis
- Proposed new guidance is to **allocate one by default, with same value**, even if not (yet) used
- Rationale:
  1. Saves effort if decide need it later (e.g., add MIB/YANG module later)
  2. Numbering space is not scarce
  3. Removes delay in Designated Expert having to decide
  4. No case on record where allocating the same value could have caused any problem

# Issue #5: web vs email for submission

- Which to use?
  - Documents and registries currently say to submit via email
  - But a web form exists on IANA site
- Proposal:
  - Update registries to say either is ok (current practice)
  - IANA exploring how to do it in the future with a new registry workflow system