

Templates for TEA

draft-hares-idr-bess-tea-templates-00
Wiki: <https://wiki.ietf.org/group/idr/TEA-templates>

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Tunnel Encapsulation Attribute (TEA) Reviews

- Due to RFC9012, IDR chairs review drafts in IDR + BESS
 - RFC9012 – lacks a template for new Tunnels, or new Sub-TLVs
 - Result: authors do not know what is required
 - Sad Result: Late in the process reviews for TEA data is painful
- Goal of this draft: Help authors give correct TEA in drafts
- Non-goal: Specific template format
- Why the template format? Easy for authors to use as check-list

Template 1 – New Tunnel TLV (1)

Field	What goes in	Who has data	Registry
Name	Short name that will go in IANA allocation	Authors define	BGP Tunnel Encapsulation Attribute Tunnel Types
Code	Code for Tunnel Type	IANA assigns FCFS	BGP Tunnel Encapsulation Attribute Tunnel Types
Description	A description of the tunnel and usage. Remember to specify which AFI/SAFIs support this TEA.	Authors define	Referenced by RFC or IETF draft
List of Sub-TLVs supported	List mandatory Sub-TLVs List optional Sub-TLVs	Look at IANA or IDR + Bess I-D.	BGP Tunnel Encapsulation Attribute lists Sub-TLVs [1]
List of Sub-TLVs Not supported	List the Sub-TLVs which are not supported	Look at IANA or IDR + Bess I-D.	BGP Tunnel Encapsulation Attribute lists Sub-TLVs [1]
Validation Procedures	Each tunnel should have a set of procedures to determine if tunnel signaled by BGP is valid.	Authors	Referenced by RFC or IETF draft.

1 – Want to add registry with Tunnel-Type versus Sub-TLV support with columns for Supported-mandatory, supported-optional, and not-supported

Template 1 – New Tunnel TLV (2)

Field	What goes in	Who has data	Registry
Multiple Tunnel Interactions	Multiple Tunnel TLVs can be included in a single BGP TEA. If there are interactions between Tunnel TLVs, then this should be described in this section.	Authors	IANA currently refers to RFC or TEA. Should IANA add registry for interactions?
Security Considerations	Identify critical information regarding network infrastructure that is passed in TLV's sub-TLVs. Instruct how operators should protect critical information.	Authors	none
Management Considerations	Give instructions on how to manage Tunnel. Hint: BGP-LS monitors many SR Tunnels	Authors	None

Tunnel TLV – Dos and Don'ts (1)

Field	What goes in	Do	Don't
Name	Short name that will go in IANA allocation	Use short name	Do not use the name of an existing or new Sub-TLV
Code	Code for Tunnel Type	Use TBDxxx if not assigned	If assigned use the form Number (IANA).
Description	A description of the tunnel and usage	Do give the AFI/SAFI this Tunnel TLV provides a tunnel link for.	Do not rewrite existing document sections, just point to section
List of Sub-TLVs supported	List mandatory Sub-TLVs List optional Sub-TLVs	Look at IANA and other RFCs	Do not forget to list mandatory or optional
List of Sub-TLVs Not supported	List the Sub-TLVs which are not supported	Indicate what happens if unsupported Sub-TLV exist in TLV	
Validation Procedures	How does the user know the tunnel is up and ready to use	Look at existing procedures [RFC9012], for SR look at draft-ietf-idr-sr-policy-safi,	Assume all Tunnel Validation procedures are the same

Tunnel TLV – Dos and Don'ts (2)

Field	What goes in	Do	Don't
Multiple Tunnel Interactions	Interactions with other Tunnels and PMSI tunnels	Do: Consider if this tunnel interacts with another tunnel specified for the prefixes (AFI/SAFI).	Don't forget to mention all Tunnel types (see rIANA or in BESS or IDR documents).
Security Considerations	Considerations for Critical information	Record what is critical information.	Do not skip this section. The Security ADs review this section.
Management Considerations	Consider if NETCONF Yang models need to be written.	Record what beyond Yang needs to be supported	Do not skip this section. Management ADs review.

Template 2 – Sub-TLV (1)

Field	What goes in	Who has data	Registry
Name	Short name that will go in IANA allocation	Authors define	BGP Tunnel Encapsulation Attribute lists Sub-TLVs [1]
Code	Value for Sub-TLV Code	IANA assigns FCFS	BGP Tunnel Encapsulation Attribute lists Sub-TLVs [1]
Encoding of Sub-TLV	Include: Diagram of Sub-TLV value field Description of each field Error handling (malformed)	Authors define	Referenced by RFC or IETF draft
Tunnel TLVs supported	TLVs mandatory Sub-TLV TLVs optional Sub-TLV	Look at IANA or IDR + Bess I-D.	[Add to IANA]
List of Sub-TLVs Not supported	TLV this sub-TLV is not supported	Look at IANA or IDR + Bess I-D.	[Add to IANA]
Validation Procedures	Whether this Sub-TLV plays a part in validating a Tunnel TLV and A reference to how.	Authors	Referenced by RFC or IETF draft.

Template 2 – Sub-TLV – Dos and Don'ts

Field	Key information	Do	Don't
Name	Short name unique name (< 50 characters)	Authors define	BGP Tunnel Encapsulation Attribute lists Sub-TLVs [1]
Code	Value for Sub-TLV Code	IANA assigns FCFS	BGP Tunnel Encapsulation Attribute lists Sub-TLVs [1]
Encoding of Sub-TLV	Limits on each field What makes Sub-TLV malformed (syntax vs. content)	Authors define	Referenced by RFC or IETF draft
Tunnel TLVs supported	TLVs mandatory Sub-TLV TLVs optional Sub-TLV	Look at IANA or IDR + Bess I-D.	Don't Forget (Shepherd + IANA will check)
List of Sub-TLVs Not supported	TLV this sub-TLV is not supported	Look at IANA or IDR + Bess I-D.	Don't Forget (Shepherd + IANA will check)
Validation Procedures	Whether Sub-TLV helps validate.	Remember you can link to another section.	Forget to consider failure and success.

Tunnel Sub-TLVs – flexible fields (2)

Field	What goes in	Do	Dont
Multiple Tunnel Interactions	Whether this sub-TLV plays a part in multiple tunnel interactions	Do consider if interactions are planned or due to failure	Do not forget to consider multiple copies of a single TLV
Security Considerations	Considerations for Critical information in Sub-TLV	Record what is critical information.	Do not skip. Security Area Directors + Shepherds check this information.
Management Considerations	Consider if NETCONF Yang models need to be written.	Record what beyond Yang needs to be supported	Do not skip this section. OPS-DIR and NM/OPS Area Directors check this information

Template 3 – PMSI interactions for Tunnel TLV

Field	Key information	Do	Don't
Tunnel TLV	Short name unique name (< 50 characters)	Authors define	BGP Tunnel Encapsulation Attribute lists Sub-TLVs [1]
Code	Value for Sub-TLV Code	IANA assigns FCFS	BGP Tunnel Encapsulation Attribute lists Sub-TLVs [1]
PMSI + Tunnel TLV both attributes	Indicate the conditions when PMSI and this Tunnel TLV can both operate.	Do consider what happens if one fails.	Forget to consider AFI/SAFIs this is valid for.
Tunnel Sub-TLVs support and non-support with PMSI	Consider what normal Sub-TLVs will conflict or be unnecessary with PMSI	Look at IANA or IDR + Bess I-D.	Don't Forget (Shepherd + IANA will check)
Validation Procedures	Whether Sub-TLV helps validate.	Remember you can link to another section.	Forget to consider failure and success.

Best Practice – Look at other drafts

Suggested IDR drafts

- draft-ietf-idr-sr-policy-safi
- draft-ietf-idr-sdwan-edge-discovery

Suggest BESS drafts

- draft-ietf-bess-multicast-controller

Look on IDR wiki for Tunnel Encapsulation Templates + reviews

Also, look for BESS reviews

Next Step

- For Drafts, contact me if you need help (Sue Hares) with TEA text
- For this Draft,
 - Should it be Wiki (<https://wiki.ietf.org/group/idr/TEA-templates>)
 - Draft – (draft-hares-idr-bess-tea-templates)
 - Or