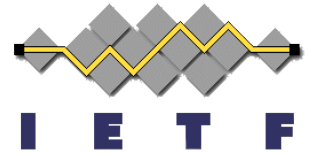
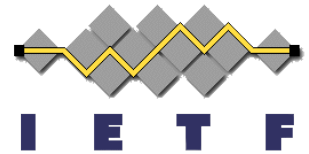


The Application Specific Link Attributes (ASLA) any Application bit draft-hegde-lsr-any-app **IETF 113**

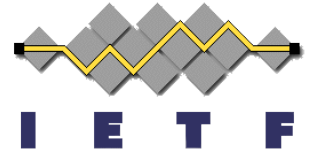
Shraddha Hegde
Ron Bonica
Chris Bowers
Robert Raszuk
Lizhenbin
Dan Voyer





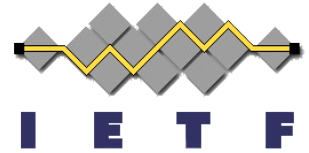
Agenda

- Recap of problem statement
- Benefits of Any bit



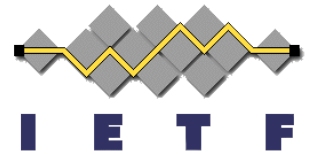
Problem statement

- Network operator may want certain link attributes to be used by all current and future applications
 - Many examples of networks evolution followed this approach
- ASLA allows for attribute advertisement where link attributes applicable to one application or some applications.
- There is limited provision to advertise attribute that is applicable to any application currently defined or going to be defined in future



Problem statement

- RFC 8919/RFC8920 do not allow application to use attributes from zero length SABM when any other attribute is advertised with an application bit set.
- More granular control over attribute advertisement for any application vs specific application is useful

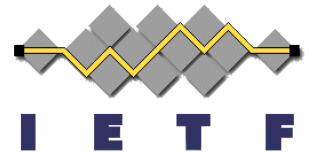


Protocol extension

SABM bit mask values for OSPF and ISIS

```
0 1 2 3 4 5 6 7 ...  
+--+--+--+--+--+--+...  
|R|S|F|          ...  
+--+--+--+--+--+--+...
```

- Bit 0: R bit:RSVP
- Bit 1:S Bit:SR-TE
- Bit 2: F bit: LFA
- Bit 3:X bit: Flex-algo
- **Bit 4: A-Bit Any Application**



Usecase

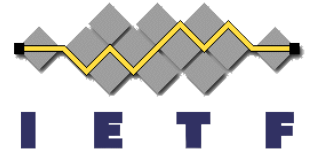
Network deployment that has deployed below attributes

- Admin groups
- SRLG
- TE-metric, delay metric
- Generic metric 128,129,130,131
- Bandwidth info sub-tlv 9,10,11
- EAG
- TE metric extn 33 thru 39

All these attributes have no application specific values.

A new application Y is defined that uses application specific value for sub-TLV 10 reservable bandwidth. Uses all other attributes in a non app specific way

Advertisement using any APP



ASLA sub TLV

SABM- Any app

UDABM- zero length

Sub-sub TLVs

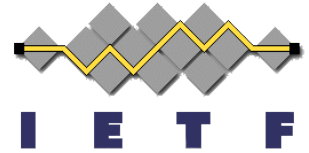
- Admin groups
- SRLG
- TE-metric, delay metric
- Generic metric 128,129,130,131
- Bandwidth info sub-tlv 9,10,11
- EAG
- TE metric extn 33 thru 39

ASLA sub TLV

SABM – y bit set

Sub-TLV 10

Advertisement using SABM zero/all app



Option 1

ASLA sub TLV

SABM- zero

UDABM- zero length

Sub-sub TLVs

- Admin groups
- SRLG
- TE-metric, delay metric
- Generic metric
128,129,130,131
- Bandwidth info sub-tlv
9,10,11
- EAG
- TE metric extn 33 thru 39

ASLA sub TLV

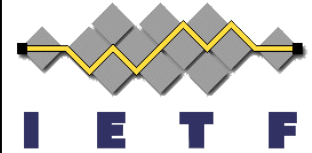
SABM – y bit set

Sub-TLV 10

- Admin groups
- SRLG
- TE-metric, delay metric
- Generic metric
128,129,130,131
- Bandwidth info sub-tlv
9,10,11
- EAG
- TE metric extn 33 thru 39

Option 1 is not efficient encoding.

Advertisement using SABM zero/all app



Option 2

ASLA sub TLV

SABM- all bits set except y

UDABM- zero length

Sub-sub TLVs

- Bandwidth sub-tlv 10

ASLA sub

TLV

SABM – y bit
set

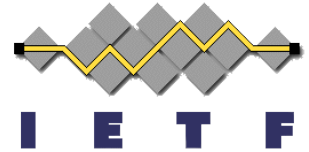
Sub-TLV 10

Option 2 is better in encoding efficiency compared to 1 but not as efficient as any app

ASLA sub TLV

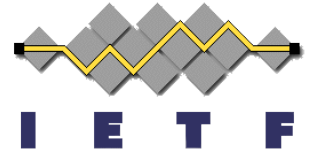
SABM – all bits set including y

- Admin groups
- SRLG
- TE-metric, delay metric
- Generic metric
128,129,130,131
- Bandwidth info sub-tlv 9,11
- EAG
- TE metric extn 33 thru 39



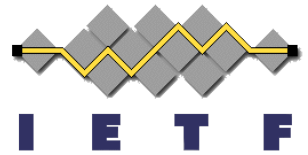
Advantages of Any app bit

- Most efficient encoding
- ▢ Very intuitive encoding and easy to understand
- ▢ Straight forward to implement.



Next steps

- Request review and comments
- Request WG adoption



Thank you