Considering ALTO as IETF Network Exposure Function

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Motivation

• Networks becoming consumable by applications and services
• Forms for exposing capabilities from networks are emerging in different contexts
  • Applications can performed informed decisions based on information retrieved from the Network instead of inferring or guessing network capabilities or status
• Examples
  • 3GPP Network Exposure Function
  • ETSI MEC APIs
  • O-RAN RIC
  • ...
ALTO as IETF Network Exposure Function

• ALTO conceived from its inception on providing information to support optimization decisions on applications
  • Initially topology information, being expanded to a number of other capabilities such as performance, segmented Network view, etc

• Existing and foreseen extension will extend the catalog of information exposure enabled by ALTO
  • Information exposed by existing specifications (RFCs or RFC-to-be): Network topology and associated cost metrics, performance metrics, segmented view, dynamic IP addressing
  • Information exposed by proposed augmentations (I-D): optimal service edge, underly view for overlays (cellular, CDN, etc)
  • Other information discussed in weekly ALTO meetings, not yet documented
    • To be included in next versions of this draft
ALTO as IETF NEF

External Applications (as ALTO Clients)

ALTO as IETF Network Exposure Function

- External CDN Logic
- Cloud App Orchestration
- 3GPP NEF
- ALTO protocol (w/wo extensions)
- SDN Controller
- Internal CDN Logic
- Others

Internal Applications (as ALTO Clients)

e.g., BGP, BGP LS, ...

IETF Network
ALTO as IETF NEF

External Applications (as ALTO Clients)

Internal Applications (as ALTO Clients)

ALTO as IETF Network Exposure Function

ALTO protocol (w/wo extensions)

External CDN Logic

SDN Controller

Internal CDN Logic

Cloud App Orchestration

Others

3GPP NEF

Cellular Network

IETF Network

e.g., BGP, BGP LS, ...

External Applications (as ALTO Clients)

Internal Applications (as ALTO Clients)
Next steps

• Collect feedback from the WG
• Prepare next version with more detail on usage of ALTO as IETF Network Exposure Function