Attachment Circuits: Updates & Next Steps

draft-boro-opsawg-teas-common-ac
draft-boro-opsawg-teas-attachment-circuit
draft-boro-opsawg-ntw-attachment-circuit
draft-boro-opsawg-ac-lxsm-lxnm-glue (new)

IETF#117
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(Reminder) Scope

- Specify an AC library with reusable types, identities, and groupings: `ac-common`
- Specify a model for managing AC-as-a-Service: `ac-svc`
  - Does *not make any assumption about the internal structure* or even the nature or the services that will be delivered over an AC
  - Accommodates both *integrated and separate provisioning models*
    - Includes *reusable groupings* for use by other service models
    - Exposes AC/bearer *references* that can be used in other service placement requests
  - Favor the approach of completely relying upon the AC service model *instead of duplicating data nodes into specific modules* of advanced services that are delivered over an AC
- Specify a network model for the AC management: `ac-ntw`
  - Augments the SAP model with required AC data nodes
  - Network-view of ACs
- Specify how to glue LxNMs and LxSMs with AC matters managed via `ac-svc/ac-ntw`: `ac-glue`
Updates Since IETF#116

- Released new versions to fix various issues (diversity, bearers' location, simplify profiles, MTU, bandwidth, record ACs that are bound to a bearer, explain how the provisioning of specific identifiers (e.g., VLAN-ID) can be coordinated, etc.)
- Bi-weekly meetings to review the issues and discuss how to address them

[https://github.com/users/boucadair/projects/1/views/1](https://github.com/users/boucadair/projects/1/views/1)
Updates Since IETF#116

• Received an LS from O-RAN
  – O-RAN-WG9-LS-2023-003-IETF on Transport Network Slicing Enhancement ([doc])

  – No reply was sent so far by OPSAWG (?)
Updates Since IETF#116

• A Change Request was accepted by the 3GPP (S5-234742) to enhance TS 28.541 (*Management and orchestration; 5G Network Resource Model (NRM); Stage 2 and stage 3*) with the required information to manage connections with transport domains:

> An NRM touchpoint is needed containing sufficient information to resolve the associated connection point towards the transport domain. This includes well-defined, unambiguous identifier(s) which can be used to resolve, and associate, the appropriate model instance(s) in TN domain.

Excerpt from *TS 28.541* (June 30, 2023)

6.3.41 ConnectionPointInfo <<datatype>>

6.3.41.1 Definition

This datatype contains information required to identify a connection point outside of scope of 3GPP MIB (e.g. transport domain), for more details see RFC 8345 [89] and YANG Data Models for 'Attachment Circuits'-as-a-Service (ACaaS) [90].
Updates Since IETF#116

• TEAS WG Specifications
  – [draft-ietf-teas-5g-network-slice-application-01](https://tools.ietf.org/html/draft-ietf-teas-5g-network-slice-application-01) discusses now how to map 3GPP NRM objects to ietf-ac-svc and ietf-bearer-svc data nodes
    • Gaps will be reported back to the 3GPP
  – [draft-ietf-teas-ietf-network-slice-nbi-yang-06](https://tools.ietf.org/html/draft-ietf-teas-ietf-network-slice-nbi-yang-06) includes now the following data node
    • "ac-svc-name": Indicates the names of AC services, for association purposes, to refer to the ACs that have been created.
      – Using the references exposed in the ACaaS would be a clean design but the use of string is OK
      – Used to avoid normative dependency on the AC models
  • The spec also includes a discussion about how ACaaS and ac-common can be used
Next Steps

• The scope and content are *more stable*
  – Build on OPSAWG RFCs 9181, 9182, 9291, and 9408

• The attachment circuit effort is being *leveraged* within the IETF and also in other SDOs

• We request the WG to *consider adoption of the AC I-D set*
Appendix
Sample Usage: Cloud

```
{
  "ietf-ac-svc:attachment-circuits": {
    "ac": [
    {
      "name": "ac-BXT-DC-customer-VPC-foo",
      "description": "Connection to Cloud Provider",
      "requested-start": "2023-12-12T05:00:00.00Z",
      "12-connection": {
        "bearer-reference": "1243-56789"
      },
      "ip-connection": {
        "ipv4": {
          "local-address": "192.0.2.1",
          "prefix-length": 24,
          "address": [
            {
              "address-id": "1",
              "customer-address": "192.0.2.2"
            }
          ]
        }
      },
      "routing-protocols": {
        "routing-protocol": [
        {
          "id": "1",
          "type": "ietf-vpn-common:bgp-routing",
          "bgp": {
            "neighbor": [
            {
              "id": "1",
              "peer-as": 65536,
              "authentication": {
                "keying-material": {
                  "md5-keychain": "nyxNER_c5sdn608fFQI3331d"
                }
              }
            }
          ]
        }
      ]
    }
  }
}
```