

Unified Properties for ALTO Updates

draft-ietf-alto-unified-props-new-10

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Overview of Unified Properties – revision 10

- After IETF 105, several WG members reviewed the document and mentioned the early part of the document was hard to read
- Major changes are on sections 1, 2, 3, that present the new features
 - Typos in the rest of document
- No changes in the design
- Need to simplify the text
- Opted for a didactic approach
 - Progressive and clearly motivated complexity of features
- Need to clarify text before submitting the document
- Same exercise needed for the rest of document

Revision 10 - digest

- 1. Introduction – non technical
 - Lists 3 limitations of RFC 7285 and the 3 related extensions proposed
- 2. Basic features of UP extension,
 - Generic definition as in early versions
- 3. Advanced features for UP extension
 - Explains limitations, in some cases of using generic features
 - Explains the risk of ambiguous client requests and how to solve it
 - Ambiguity issue was raised in 2018 and motivated most of advanced features

New structure of concept sections 2 and 3

New ToC

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Section 2. Basic features of UP extension

- Defines “generic” features as in early versions
- Added introduction with purpose of UP extension
 - convey properties on objects that extend ALTO Endpoints and are called ALTO Entities
- 2.1 Entity
 - Generalizes Endpoints
 - Examples: endpoints, PID, ANE, ...
- 2.2 Entity domain
 - Set of entities of same type = type of entity domain
 - Defines entity ID format
 - Example “ipv4”, “pid”
- 2.4 Entity property
 - Can be network-aware (AS Number) or network-agnostic (geographical region)
- 2.5 New information resource and media type: ALTO Property Map
 - GET-mode or POST mode

Section 3. Advanced features for UP extension

- Explains need, in some cases, for resources-specific domain and property
- 3.1 Entity Identifier and Entity Domain
 - next version will say “*entity domain ““prefixes”” entity ID*”
 - Entity ID owned by exactly 1 entity domain
 - Entity ID owned by exactly 1 entity
 - Endpoint having an IPv4 and IPv6 address will be represented as 2 ≠ entities
- 3.2 Resource-specific Entity Domain Name
 - Entity ID "pid:mypid10" may be defined in netmap1 and netmap2 and thus point to different sets of endpoints
 - **Solution:** “compose” *entity domain* with resource ID → netmap1.pid:mypid10 and netmap2.pid:mypid10

Section 3. Advanced features for UP extension

- 3.3 Resource-specific Entity property
 - entity "192.0.2.34" defined in the "ipv4" domain may have two "pid" properties defined in two different network maps "netmap1" and "netmap2"
 - **Solution:** "compose" the property type with resource ID → property ID = "netmap1.pid" and "netmap2.pid"
- 3.4 Entity hierarchy and property inheritance
- 3.5 In next slide
- 3.6 Connection between Resource-Specific Entity Domain/Entity Property Mapping and Information Resources
 - About IANA registration of (entity, property) mapping
 - Text needs clarifications
 - Discussion: mapping definitions may be resources agnostic and text should be adapted

Section 3. Advanced features for UP extension

- 3.5 Applicable Entity Domains and Properties in the Property Map Capabilities – **to be completed + examples**

- To expose to clients what properties can be queried on what entities
- Ambiguity issue in previous design (**example will be added in v11**):

```
"uses" : [ "netmap1", "netmap2", "cdnifci-map-4" ]
  "capabilities" : {
    "entity-domain-types" : [ "ipv4", "countrycode", "asn" ],
    "prop-types" : [ "cdni-fci-capabilities", "pid" ]
  }
```

Problem: querying “pid” property on “countrycode” or “asn” entity is not allowed

- **Solution:** (**example will be added in v11**)

- for each entity domain, expose list of applicable properties in capabilities

```
"mappings": {
  "ipv4": [ "netmap1.pid", "netmap2.pid", "cdnifci-map-4. cdni-fci-capabilities"],
  "countrycode": ["cdnifci-map-4. cdni-fci-capabilities"],
  "asn" : ["cdnifci-map-4. cdni-fci-capabilities"]
}
```


Illustrative sections

- Some sections do not provide any protocol specifications
 - but are meant to explain the design,
 - Text adds complexity and is not useful to implementors
 - Examples in sections: 6.1, 6.2, section 3.6 and relation to 12.4
 - Options: clarify and move to annex or drop

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Next steps

- Fix typos and errors detected right after sending new version
- Continue clarification and clean-up
- Last check on IANA section
- Propose for WGLC

Thank you

Back-up slides follow