A Vocabulary of Path Properties

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Intro and Scope

• Path-aware network
  ...exposes information about **forwarding paths and services** associated with these paths to **hosts** or other entities
  (See draft-irtf-panrg-questions)

• This draft: How to express this **information** = Path Properties
**Terminology (1)**

**Node:** Processes **packets** (sends, receives, forwards, modifies them)  
Physical or virtual

**Host:** Node that executes application programs on behalf of users  
(RFC 1122)

**Link:** Connects two or more **nodes**, enables to exchange **packets**.  
Physical or virtual, unidirectional
**Terminology (2)**

**Node**

**Subpath**: Sequence of adjacent path elements of a path

**Path**: Sequence of adjacent path elements over which packets can be transmitted. Starts and ends with **node**.
**Terminology (3)**

**Flow**: Entity made of **packets** to which the traits of a path or set of subpaths can be applied in a functional sense.

**Property**: Trait of **path element** or sequence of path elements or trait of a **flow** with respect to one or a sequence of path elements → Tuple of sequence of path elements, (flow), name, value.
Path Properties (examples)

- Access Technology
- Monetary cost
- Administrative domain
- Transport protocols available
- Link Capacity
- Link Usage
- One-Way Delay
Use cases (examples)

- Performance monitoring, enhancement
  - Observe Quality of Service
  - Identify problems, trigger countermeasures

- Path Selection
  - Choose which traffic to send over which path(s)
  - Goal, e.g., related to security or performance

- Traffic configuration
  - Adjust parameters of traffic sent on path
  - Invoke path elements to be involved
Questions to RG

• Do these terms work
  ...as a basis
  to develop a common language
  to talk about paths in this Research Group?

• Adoption?