Leveraging Self-description to Visualise Autonomic Networks

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Motivation
- Current Internet is under structural stress
- Hour-glass model

Autonomic Networking Architecture
- Clean slate design of the Future Internet
- Meta-architecture to design, create, and federate network architectures
  - Component based
  - Dynamic composition
  - Different networks can coexist
  - Monitoring is a first class citizen in ANA
  - Enable self-* properties

ANA Visualisation
- Functional Block (FB)
  - It processes information
- Compartment
  - Internal policies (routing, addressing, ...)
  - independent of ANA
  - Inter-compartment communication: standard API
- Information Dispatch Point (IDP)
  - Local label to access a FB or a IC
- Information Channel (IC)
  - Generic communication channel

ANA Abstractions
- ANA Node Abstractions
  - FB1, FB2
  - IC

ANA Browser
- Node compartment self-description
- minmex: “Microkernel” for networking
- Metadata about the current networking
- List of FBs loaded in the system
- List of services published by the FBs
- Table with the IDPs in use
- FB self-description
- getSelfDescription() primitive

Conclusions
- The ANA Browser can be used to inspect ANA Network instances thanks to their self-description properties

Future work
- ANA Browser
  - Allow remote configuration
  - Automatic processing of self-description
  - Define network description ontologies

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