SOAP on a Rope:
Global Grid Forum Network Measurements Working Group Schemas for Web Services

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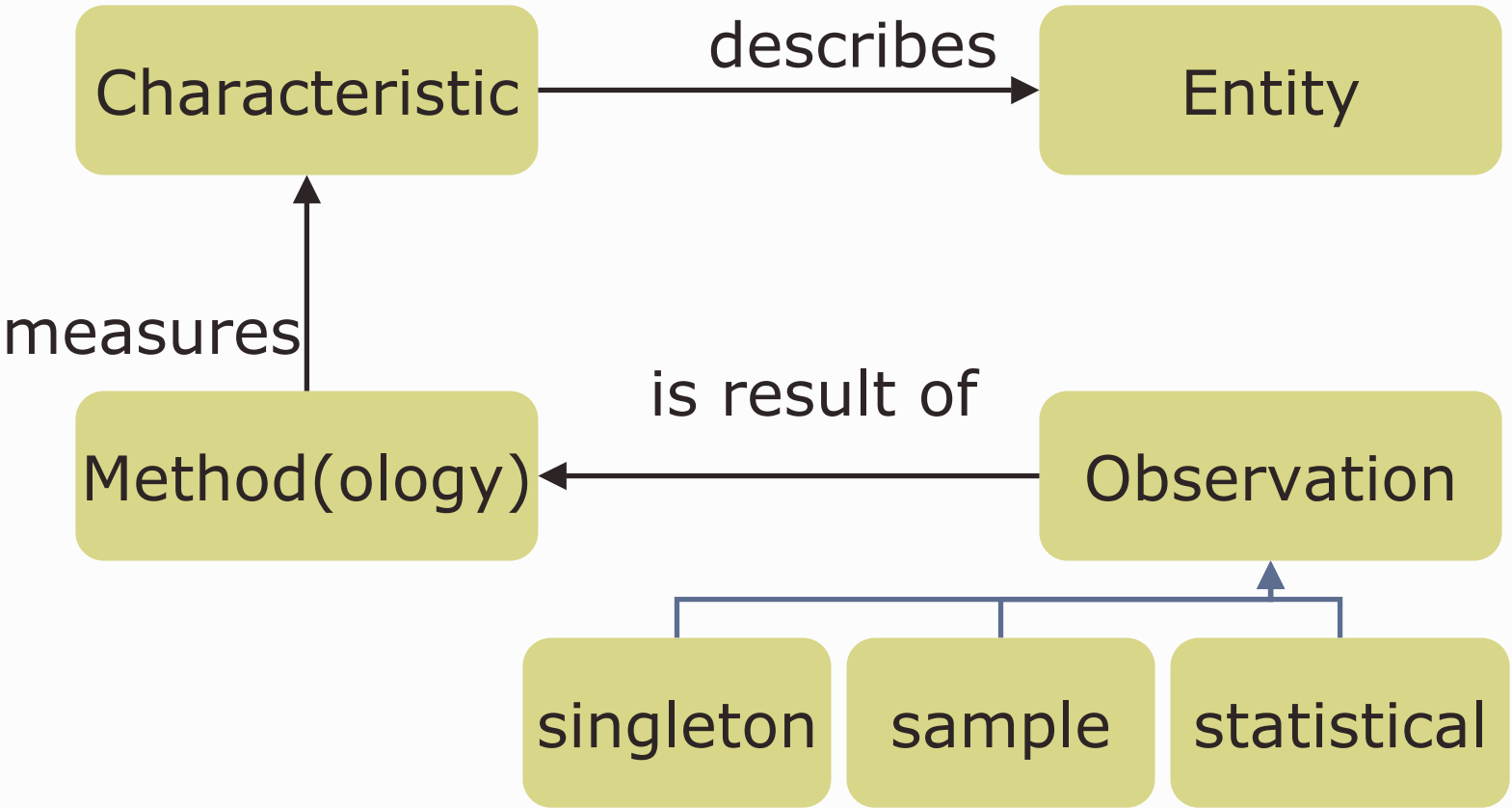
NM-WG History

- BOF: GGF3, Italy, 10/2001
- First meeting, GGF4, Toronto, 2/2002
- Charter
  - Identify and characterize network measurements useful for Grid (middleware)
- http://www-didc.lbl.gov/NMWG/

NM-WG "Hierarchy" doc

- Classification and naming scheme
- Measurements included:
  - delay.{roundTrip, oneWay{.jitter}}
  - bandwidth.{capacity, available, utilized, achievable}
  - queue.{discipline, capacity, length}
  - hoplist
  - loss.{roundTrip, oneWay}
  - availability.{MTBF, availPattern}

Starting point: Ontology (from *Hierarchy* doc)



Target Audience for Data

- End users
- Network administrators
- Grid middleware
- Network researchers

Grid Middleware Use-Case

- Measurement framework has some network data
  - Advertises a Grid Svc (discovery step out-of-scope for the moment)
- Grid middleware requests some results from the service
- Service replies with the results

Not done yet!

- Need XML schemas to describe set of results
- Need/want XML schemas to structure the request
  - Querying archived data
  - Running tests on demand
- Request/Report schemas are born

How to ensure interop

- Canonical description of what must go on the wire: WSDL (web services description language) document:
  - Core of WSDL is simply:

    <input message="NMWG-Request" />

    <output message="NMWG-Report" />
- Request/Report schemas now a focus of NM-WG work

Simple scenario, revisited

1. Get WSDL, generate stubs in language of choice (Python, Java, ..)
2. Run “server” stub on framework’s side
3. Run “client” stub on middleware side

End of slides

Modifications

Subject

Characteristic

Entity

Method(ology)

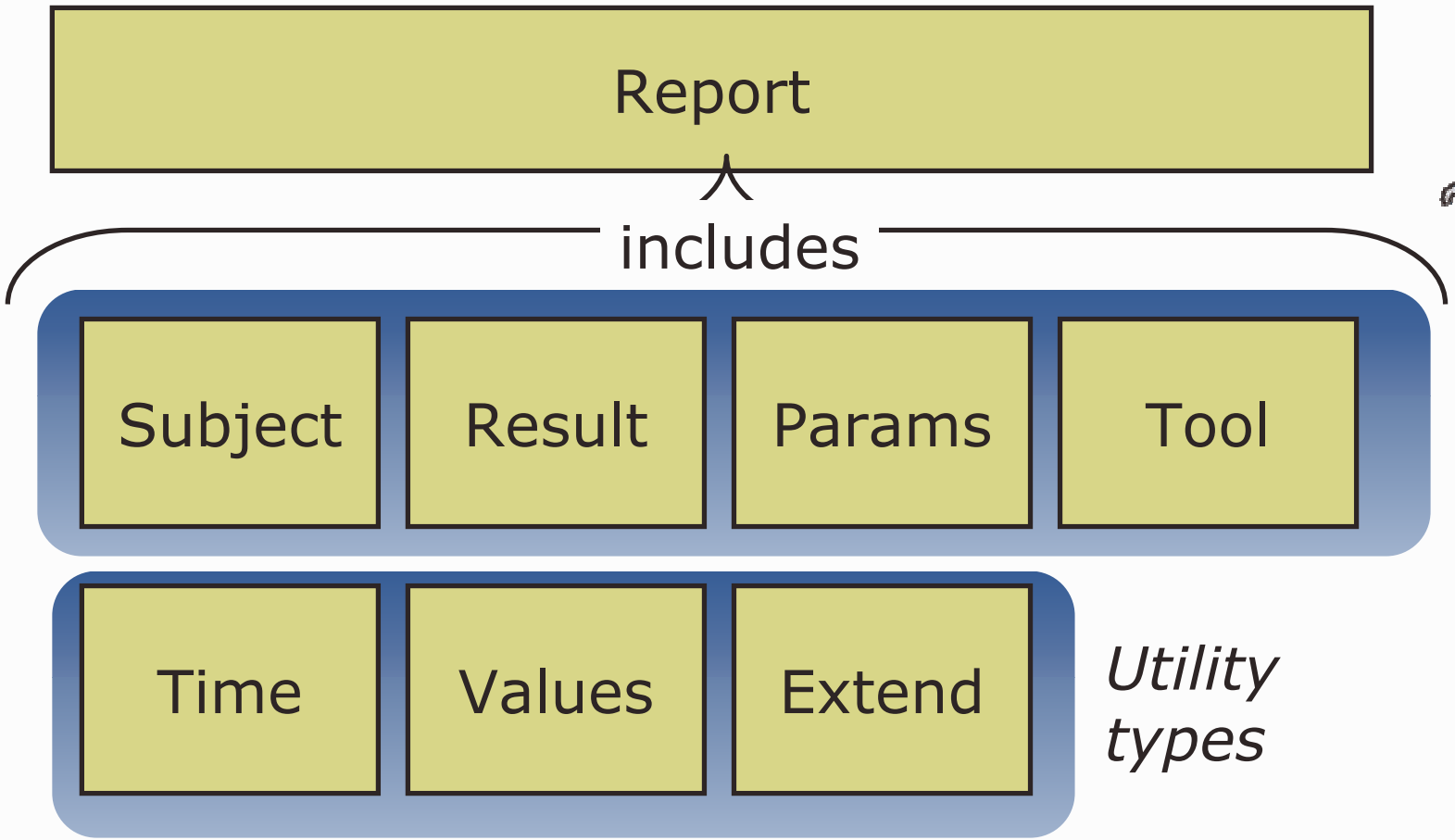
Observation

singleton

sample

statistical

Report Schema



Report Schema

- Metadata section (0..N)
  - <metadata identifier$_i$>
  - Characteristic || Subject || Methodology
- Result section (0..N)
  - <metadata identifier$_j$>
  - ResultSet || ResultSetRef

- Time interval (0..1)
- Result (0..N)
- Statistic (0..N)

"Result delivery info"
Use WS-?something?
For now: place-holder

Result "batching"

- For efficiency, results may be delivered in batches
- Each result section indicates:
  - Batch #
  - (optional) total # of batches
  - (optional) batch size [hint about # of contained atomic measurements]