Thoughts on Validation

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Layered Validation

- Validation must take place at every layer where errors may occur:
  - Underlying network layer: TCPIP
  - Application transport: HTTP
  - Encoding of data: SOAP
  - Format of data: XML Schema
  - Conversations: ??

Data Validation

- Use formal structural languages like XML Schema, with validation tools.
- Use heuristics for reasonableness.
  - "This is not Funny" looks like "Andrew van der Westhuizen", but is probably not a name.
- Use an engine/language approach – the engine can understand a format specification language so can validate many different data formats.

Protocol Validation

- Interoperability implies Black Box testing.
- Create test cases for boundary conditions, expected errors, equivalence classes, etc.
- Submit each test or test sequence and assess the result.
  - Did an error/exception occur where it was not expected?
  - Did an error/exception not occur where it was expected?
- Not all tests will be applicable – depending on previous tests and the semantics of the protocol.