draft-peterson-modern-teri

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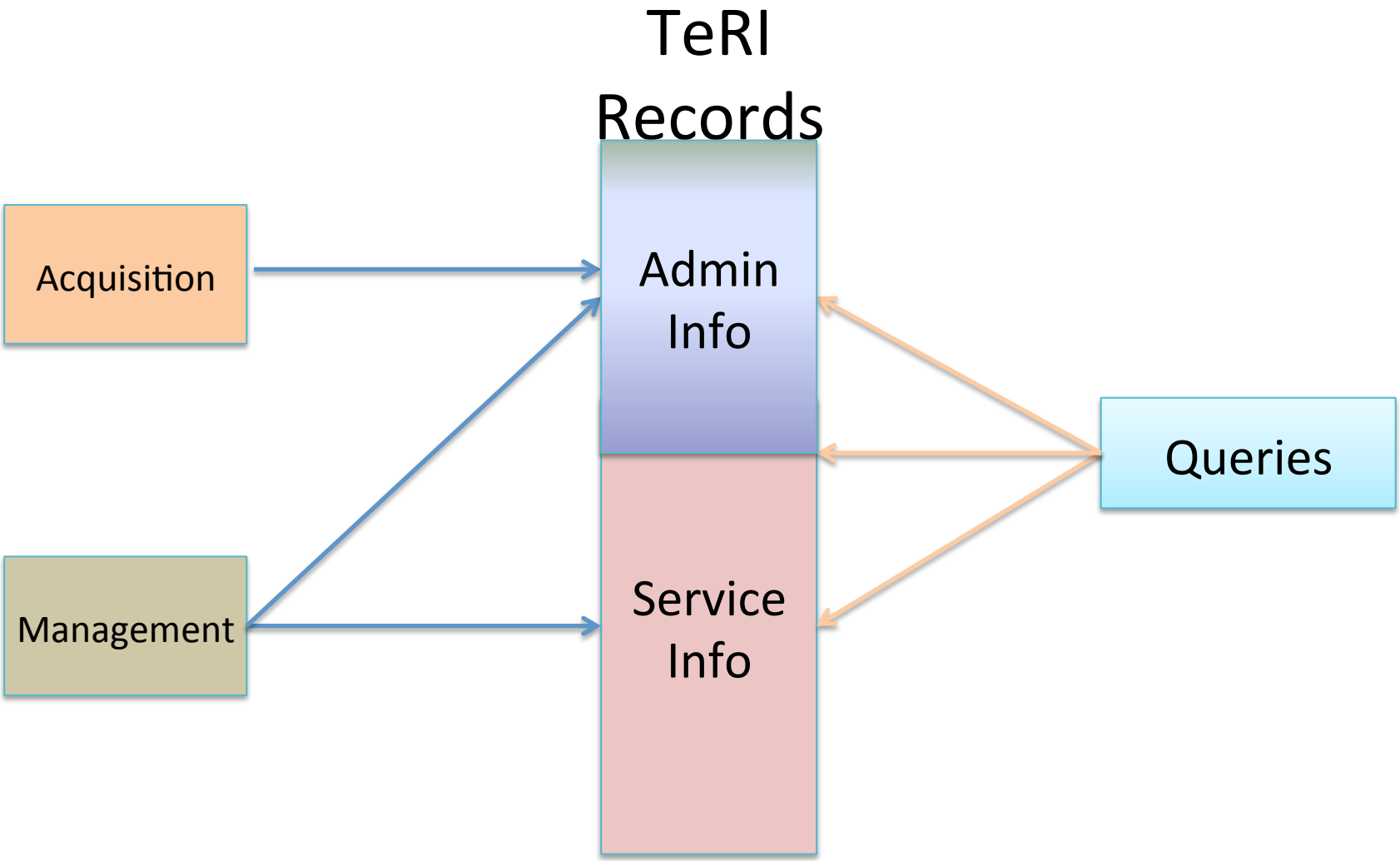
What is TeRI?

- A framework for telephone-related information
  - Addresses the requirements in modern-problems
- Discussed this at Prague at IETF 94
- Successor to the TeRQ proposal
  - Generalized to acquisition, retrieval, management
- Like TeRQ, this is an information model
  - Trying to find the right semantics for records and operations
  - We'll worry later about the proper encoding and transports
- We decided in Prague to do this in one spec

Telephone-Related Information



Just a logical picture

Moving Parts

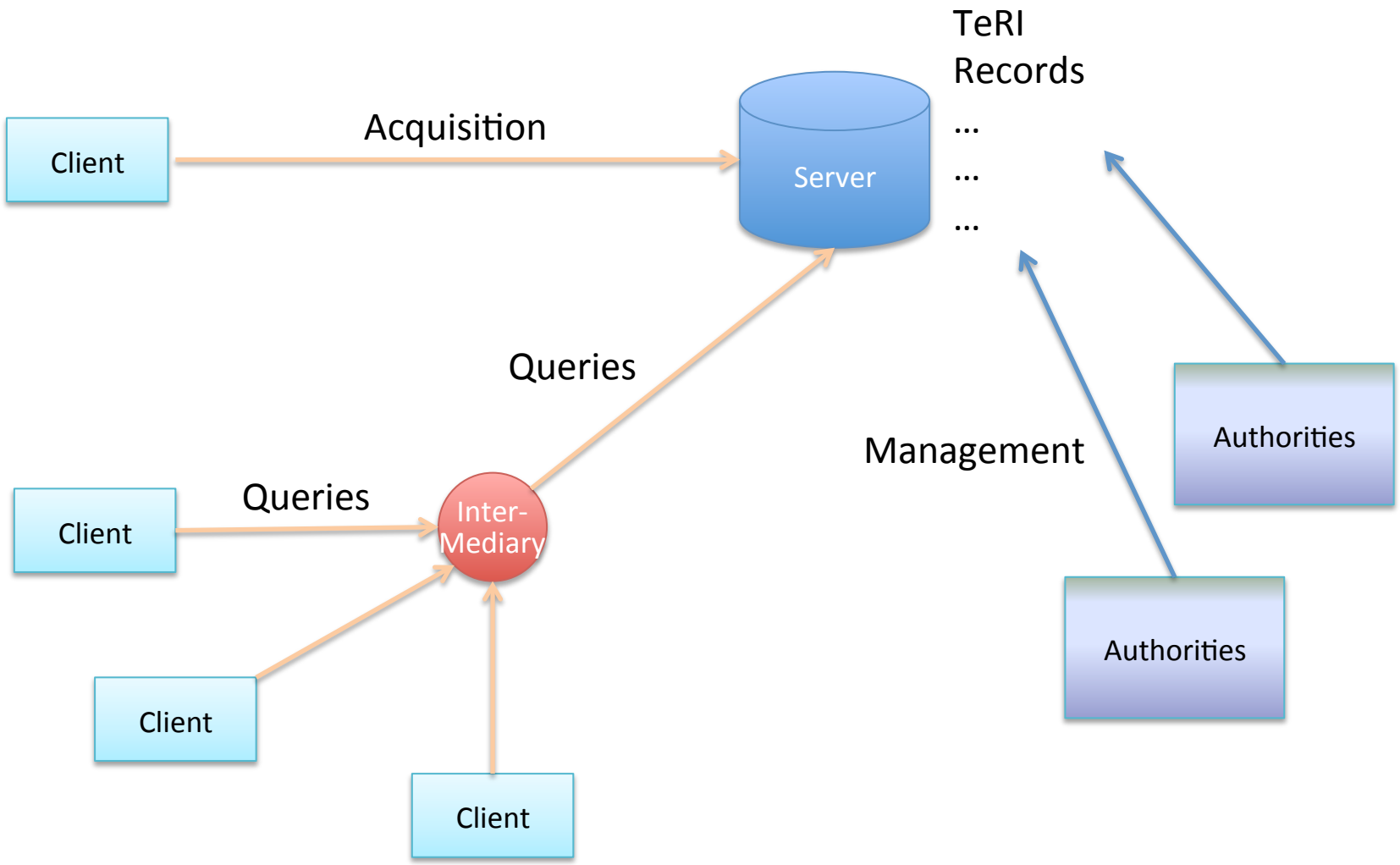
- Acquisition protocol
  - How do I request and receive numbers?
- Management protocol
  - How do I provision services for number?
- Query protocol
  - How do I get information about a number?

- These protocols access overlapping data
  - If you can provision it, you should be able to query for it
- Surely this is a common information model

Mapping the Model to an Instance

- TeRI Records would live in servers
  - Could be public, centralized and monolithic
  - Could be distributed, or private
  - The logical architecture will be the same
  - Each TN might have multiple Records
- All sorts of entities might manage or query
  - Could be carriers, enterprises, or end users
  - Query access will vary depending on who is asking
  - Provisioning will reflect who provisioned

The TeRI Interfaces



Operations and Records

- TeRI defines all three protocols in terms of this model
- Each protocol has its own Operations, but will operate on a common class of TeRI Records
- Operations will have their own Source, Subject, and Attributes
  - Source indicates the originator of the Operation
  - Subject would typically be a TN itself (or a range)
- TeRI Records contain information about TNs
  - Some Records might cover a range of TNs

Think SCRUD

- Search, Create, Read, Update, Delete
- Creation begins the lifecycle
  - A Registry always creates the first Record
  - Bootstrap adminsitration record designating the Registry itself
- Should Records be partially updated, or wholly replaced?
  - Currently, the Authority who creates a record is the only one who can modify or delete it
    - i.e., a Registry creates a Record for a number, but each CSP would create a separate Record for services associated with it

The Acquisition Operation

- Query:
  - Source (Query Source, Query Intermediary)
  - Subject (Telephone Number/Range)
    - Used to have SPID, currently removed per MODERN scope
  - Attributes (constrains query, say, to finding a particular number in a range)
- Response:
  - Response Code
  - TeRI Record (newly generated assignment indicating who can control Records for this TN/Range)

The Management Operation

- Query:
  - Source (Query Source, Query Intermediary)
  - Subject (Telephone Number/Range)
    - Used to have SPID, currently removed per MODERN scope
  - TeRI Records (including Record ID)
- Response:
  - Response Code

The Retrieval Operation

- Query:
  - Source (Query Source, Query Intermediary)
  - Subject (Telephone Number/Range)
    - Used to have SPID, currently removed per MODERN scope
  - Attributes (constrains query: e.g., “voip” if only looking for VoIP, or Route Source, or Record ID)
- Response:
  - Response Code
  - TeRI Record

TeRI Record Contents

- TeRI Records would contain
  - **Subject** (the TN or TN range of the record)
  - **Authority** (Source of the data, usually the provisioner)
  - Contact (administrative contact, WHOIS/WEIRDS)
  - Service (a service associated with the TN)
  - **Identifier** (unique ID for the Record)
  - Signature (typically a crypto assurance of the Authority)
- Divided into Service and Administrative Information
  - Services records always have a Service
  - Administrative records always have a Contact
- Obviously different actors would set/get different Record elements

TeRI Record Element Types

- Telephone Number (RFC3966 – but should we revisit?)
  - Ranges – need some work here
- Domain Name
- URI
- IP Address
  - IPv4/IPv6
- Contact
  - Per jCard
- SPID
  - Currently specified as four-digits, other SPID types possible
    - GSPID, ITAD, etc.
- Trunk Group
  - Currently points to the Gurbani/Jennings RFC
- Display Name
  - Support for CNAM as well as a SIP “From” header field
- Extension
  - Reserved for further use

Transport and Encoding?

- Agree on semantics first, then define bindings and profiles
  - A binding is defined as an encoding and a transport
    - We want at least one binding per protocol, maybe allow more
  - Could build on JSON/HTTP, could build on ASN.1/UDP
  - Bindings need to detail how the elements of the data model are mapped to the encoding
    - Other low-level details like chunking, representation of cryptographic security, etc.
  - Requirement: to transcode between bindings without losing data (at an intermediary)
- Aim for maximum applicability
  - While not overcomplicating the model

This is a -00

- We need to figure out if we have the right Record elements and types
  - And an appropriate extensibility model
- Do we have the right semantics for operations?
- We need better understanding of element types