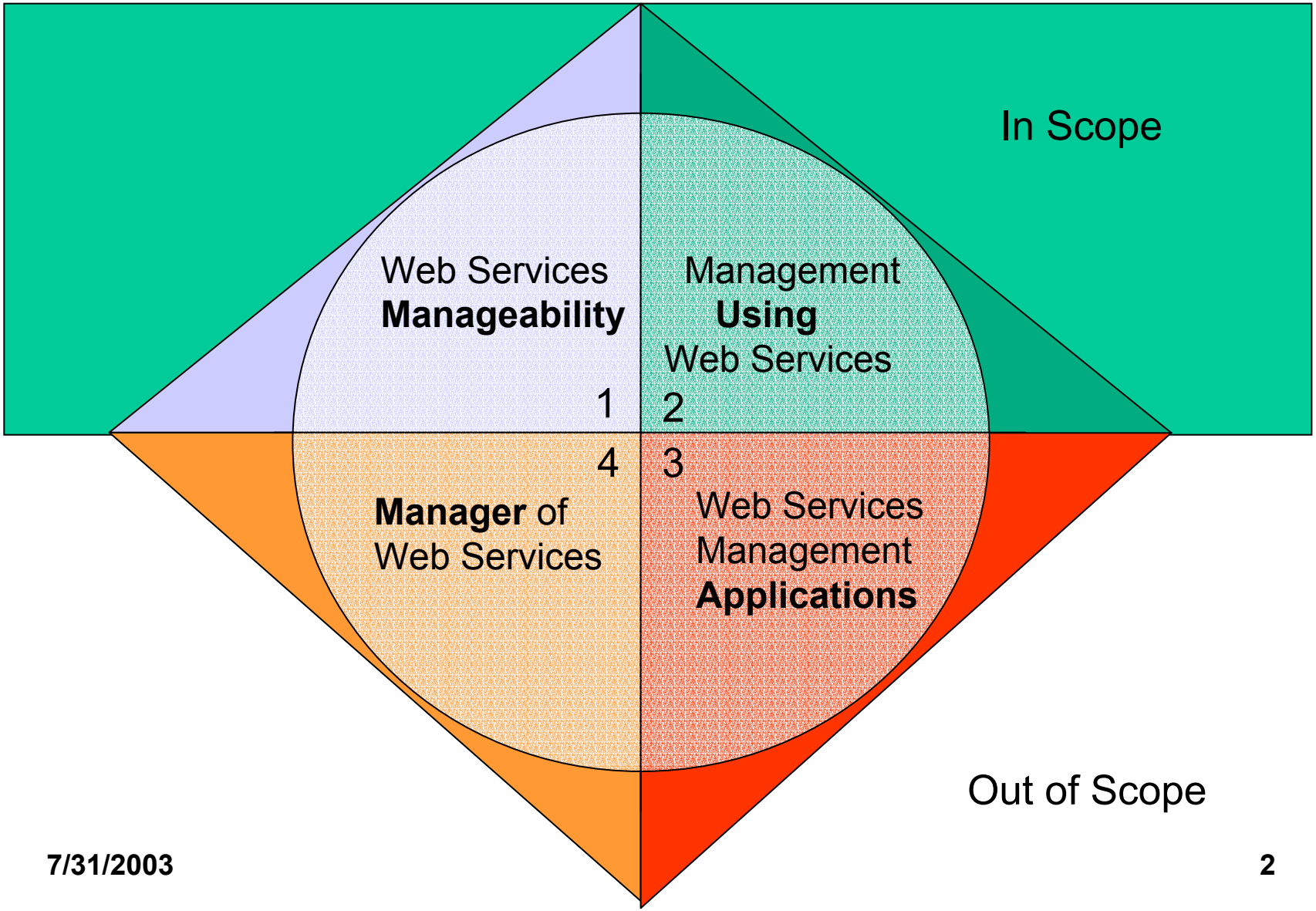
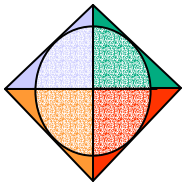
Management and Web service Management

- This presentation offers work to OASIS completed by IBM with contribution from CA and Talking Blocks
  - *The work details a frame of reference for Management Applications, Managers, Manageability using Web services and Manageability of Web services.*
  - *The work also identifies the management concerns pertinent to each and the dependencies in terms of common description that are required.*

Scope of Management and Web Services

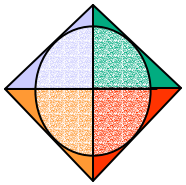


Web Services Manageability



- Defines manageability of elements of the Web service Architecture
  - *The elements include Web Service endpoint, Execution Environments, Common services*
  - *The manageability interfaces for the elements need to cover how properties, operations, and events are defined for topics like configuration, metrics, state, etc.*
  - *The manageability interfaces should to be represented as Web services.*
- Views drive multiple manageability interfaces:
  - *Provider, Requester*
  - *Owner, Hoster*

Management Using Web Services

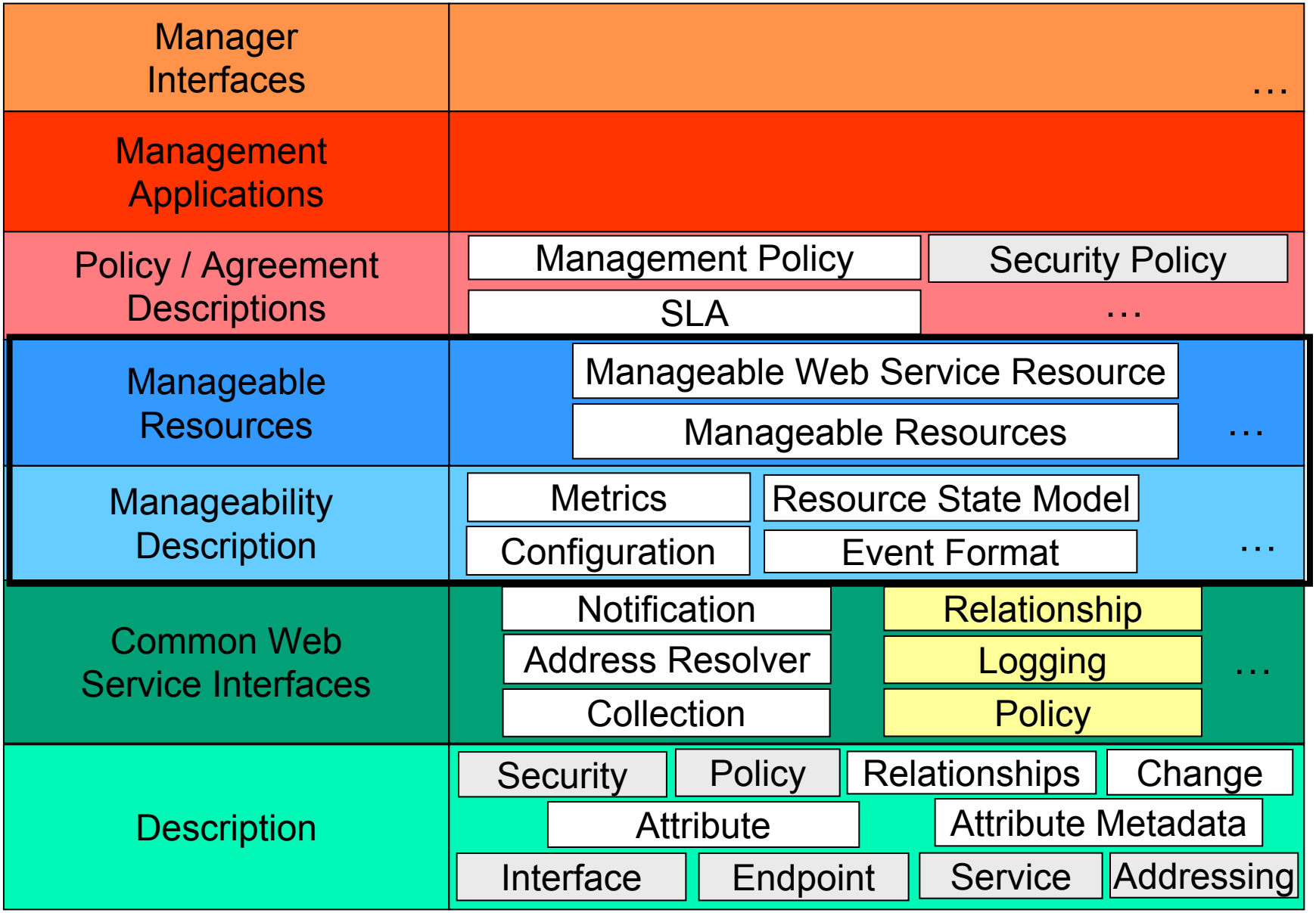


- Defines the representation of manageable resources as Web services, this includes the definition of:
  - *Generic manageability schemas and interfaces*
  - *Interfaces for directly manageable Web services*
  - *Interfaces that integrate existing managed resources into a Web services environment*
- This task requires a Web Services based distributed computing platform
  - *enables interoperability between managers and managed resources*
  - *e.g. Policy, Notifications, Relationships, etc.*
- The WSDM TC has agreed in principle that we should not develop the technologies that are broadly applicable to the Web services platform
- The WSDM TC will develop technologies that are specific to solving the management problem

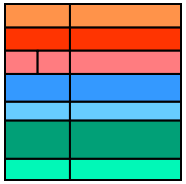
IBM, CA, Talking Blocks propose:

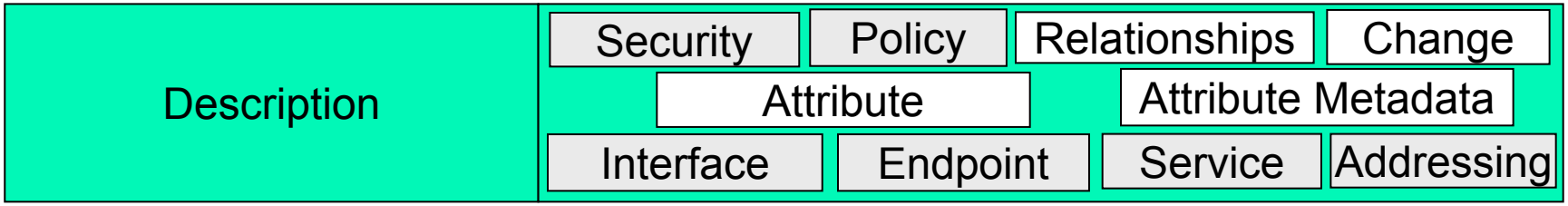
- In order to define management using Web services, we must depend on Web services as a platform
- We must not invent technologies that are rightfully part of a Web services platform
- It is important to help define these technologies to ensure that the web service platform satisfies our requirements
- It may help to identify a specification stack for *Management using Web services* so that it
  - does not introduce unique infrastructure requirements for managing resources
  - clearly differentiates the interface aspects that are management specific from those that are not
  - is possible to organize the development and specification of the pieces such that the various efforts can be developed in parallel and still fit together

Management Specification Stack



Web Services Description Specifications





The general purpose mechanisms necessary to DESCRIBE interfaces

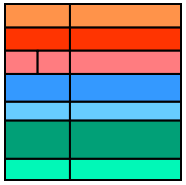
- Service, Endpoint, Interface, Address – described in WSDL, WS-Addressing
- Attributes – describe attributes in WSDL
- Attributes MetaData – describe metadata on attributes
- Relationships – describe relationships between endpoints, interfaces or other resources
- Policy - described using WS-Policy
- Security – described using WS-Security
- Change – described by WSDM WS-Change Requirements (versioning, compatibility, etc.)

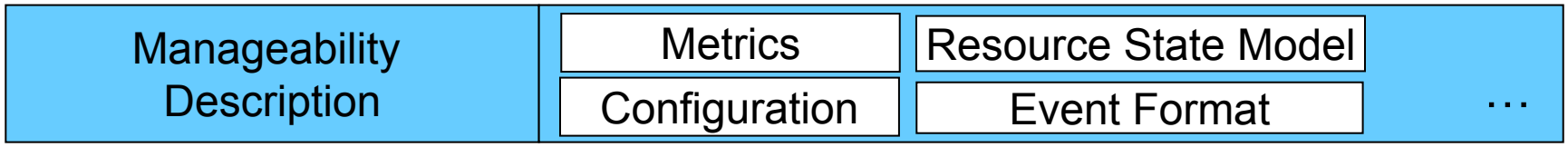
Common Web Services

The common utilities necessary to perform the management tasks

- Notifications – notification subscription and polling
- Address Resolver – returns an endpoint reference given an OGSI identifier, interface, etc
- Collection – a searchable collection of services
- Relationships – relationship repository, allows access to and traversal of relationships
- Logging – logs events
- Policy – repository for policies

Generic Manageability

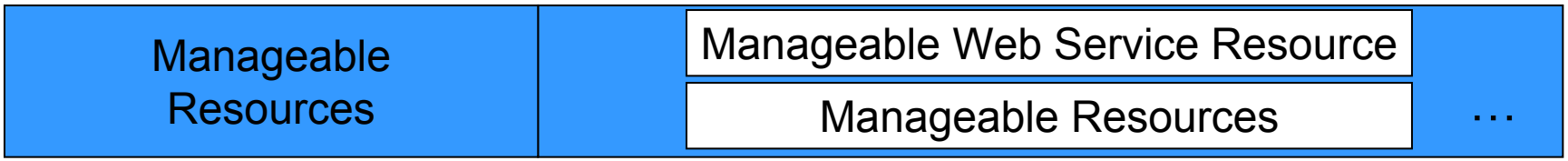




The mechanisms to describe information specific to management interfaces

- Metrics – express metrics and derived metrics (measurements)
- Configuration – express configuration and configuration sets
- Resource State Model - State and transition models
- Event Format – base XML format for management events

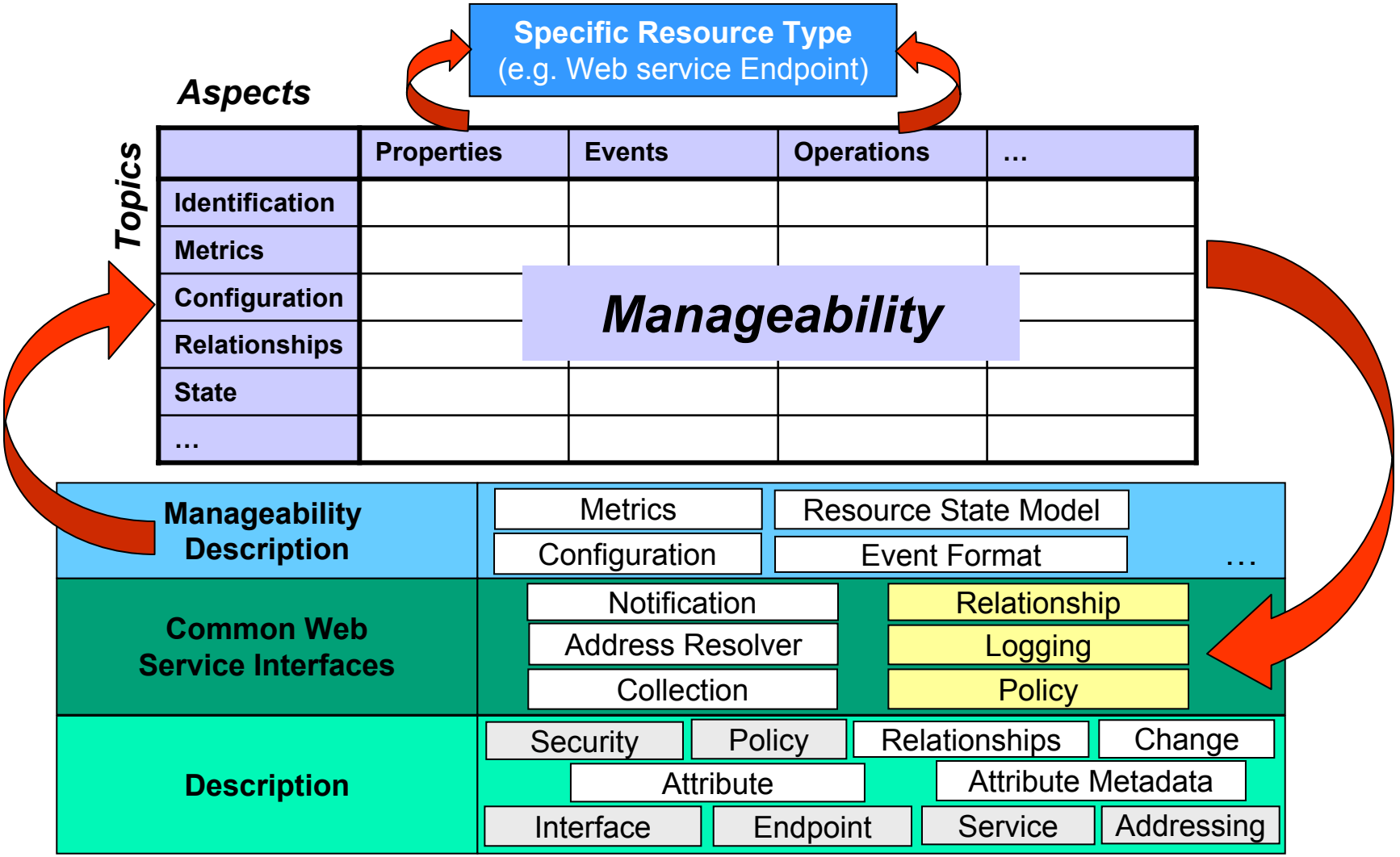
Manageable Resources



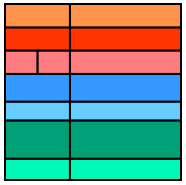
Defines how to describe manageable resources using the generic manageability mechanisms, description mechanisms, and common Web services.

- Manageable Resources – describe a manageable resource
- Manageable Web Service Resource – describe a manageable Web service as an IT resource, using ‘Manageable Resources’

Manageability Interfaces



Policies and Agreements

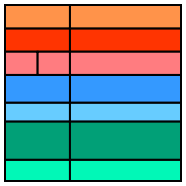


Policy / Agreement Descriptions	Management Policy	Security Policy
	SLA	…

Defines how to describe policies about managed resources and agreements between service providers and service clients.

- Management – define standard policy templates for management (uses WS-Policy)
- Security – describe security policies specific to management
- SLA – describe service level agreements (condition, consequence)

Management Applications

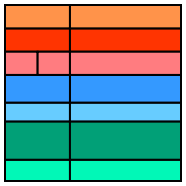


Management Applications	

Applications that use the management information, capabilities and management services

- Standardization is not necessary
- Some areas where it is currently occurring:
  - GGF is working on Provisioning management
  - GGF is starting on service level agreement management

Manager Interfaces



Manager Interfaces	…

Defines interfaces to manager role applications

Questions and Feedback

- The concerns identified in each layer may move, be added to, or removed as the management requirements are formalized.

- We would like to use this stack to:
  - *help organize our work in our specifications*
    - Priorities
    - Dependencies
  - *help us identify which groups may be specifying some of these descriptions and interfaces so WSDM can form the right liaisons*