

A Generic Autonomic Deployment and Management Mechanism for Resource-based Network Services

draft-ietf-anima-network-service-auto-deployment-03

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ANIMA WG

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A graphic consisting of a blue rectangle with the word "NEW" in white, and a yellow rectangle below it with the word "UPDATE" in black. There are small blue and yellow dots scattered around the rectangles.

NEW

UPDATE

Major Changes from IETF114

- Title change:

 - An Autonomic Mechanism for Resource-based Network Services Auto-deployment

 - > A **Generic** Autonomic Deployment and **Management** Mechanism for Resource-based Network Services

- Context change:

 - Largely rewritten the description texts **without changing the document structure and purpose**

 - Emphasized the **generalization** of this mechanism beyond the quality transmission service

 - Emphasized **dynamic auto management** beside auto deployment

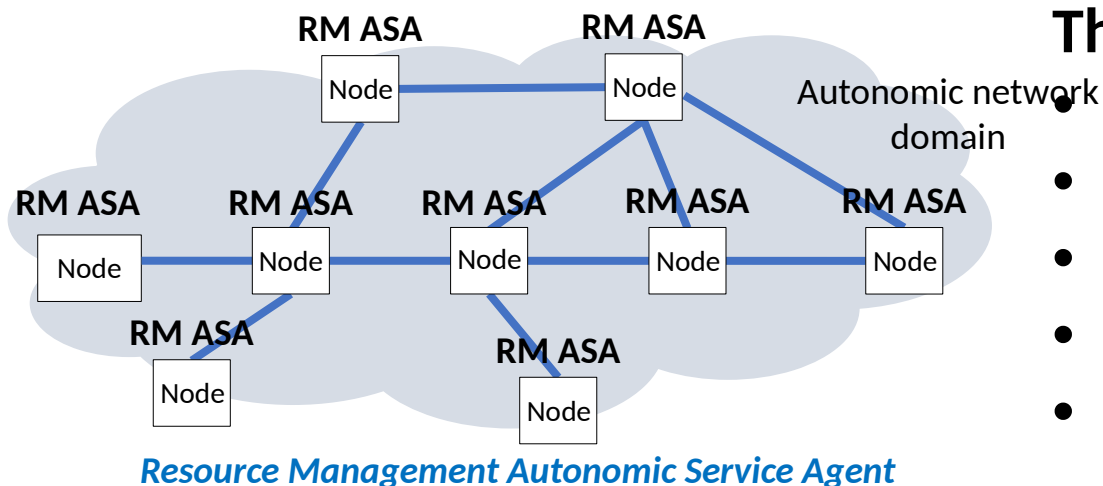
 - Updated the auto deployment and management process of the Quality Network Transmission Service

 - Added two new subfields under "ResourceManager" Objective and their registry tables for IANA consideration

 - Editorial changes

Overview & scenarios

- This draft introduces an **enhanced and extensible** mechanism that supports **dynamically dispatching** of network resources.
- Emphasized the **generalization** of this mechanism beyond the quality transmission service
 - In the previous version, the draft mainly considered transmission services, but the mechanism is oriented to more general service deployment & dynamic management

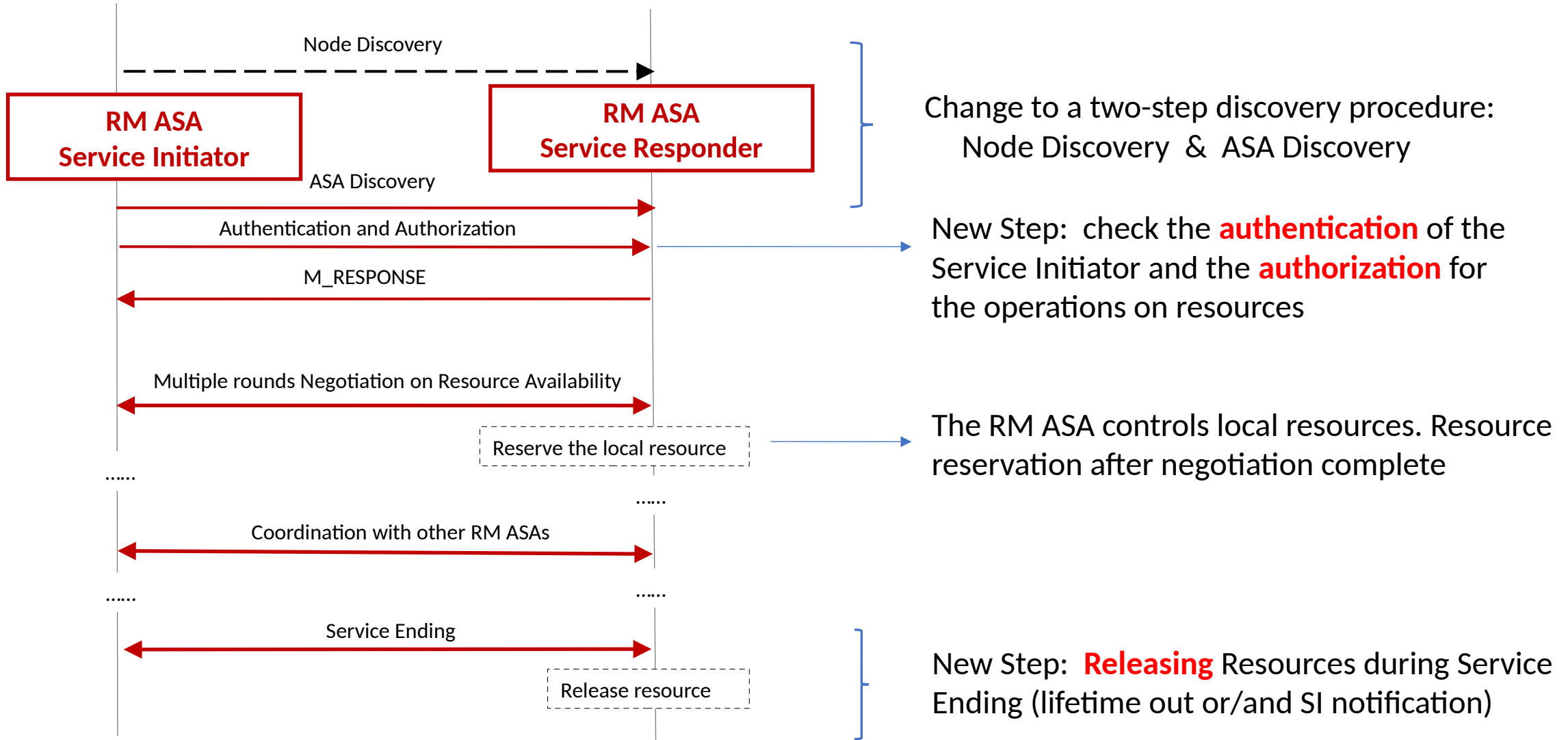


The major scenarios, but no limited:

- Quality transmission services
- Difference transmission services
- In network cache/storage services
- Computing services
- Information services

**More
Generalization
Scenarios**

Auto-deployment Process



GRASP Objective Options Update

Previous Version

```
autonomic-network-service-value = [  
  [  
    source-ip-address,  
    destination-ip-address,  
    service-tag  
  ], [  
    *resource-requirement-pair  
  ]  
]
```

Use new parameters **service-type,**
service-id,
service-lifetime,
to **identify a service**

```
autonomic-network-service-value = [  
  [  
    service-type,  
    service-id,  
    service-lifetime,  
    service-tag  
  ], [  
    *resource-requirement-pair  
  ]  
]
```

service-information

```
service-type = 0..7  
service-id = uint  
service-lifetime = 0..4294967295 ;  
in milliseconds  
service-tag = [ *service-tag-info ]  
service-tag-info = text
```

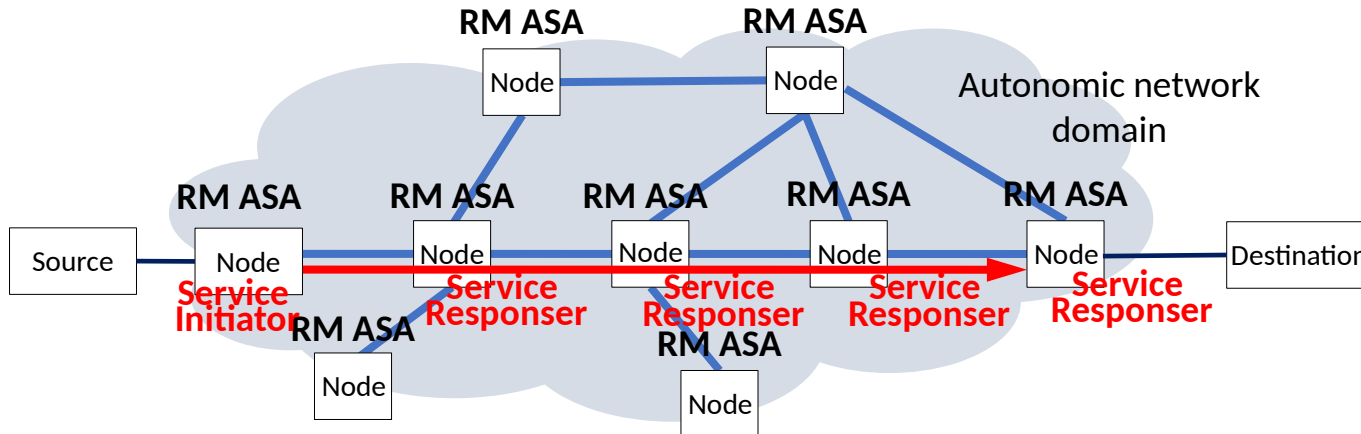
resource-information

```
resource-requirement-pair = [  
  resource-type,  
  resource-value  
]  
  
resource-type = 0..7  
resource-value = uint
```

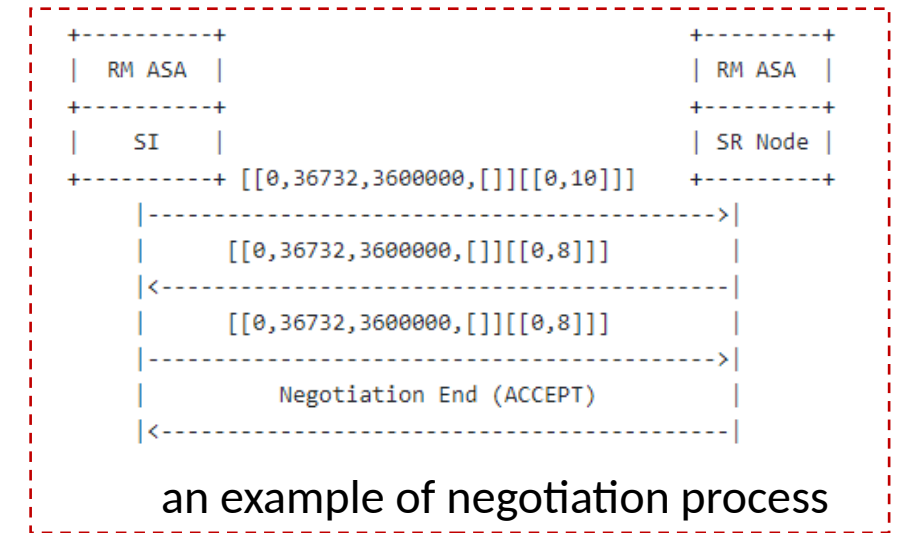
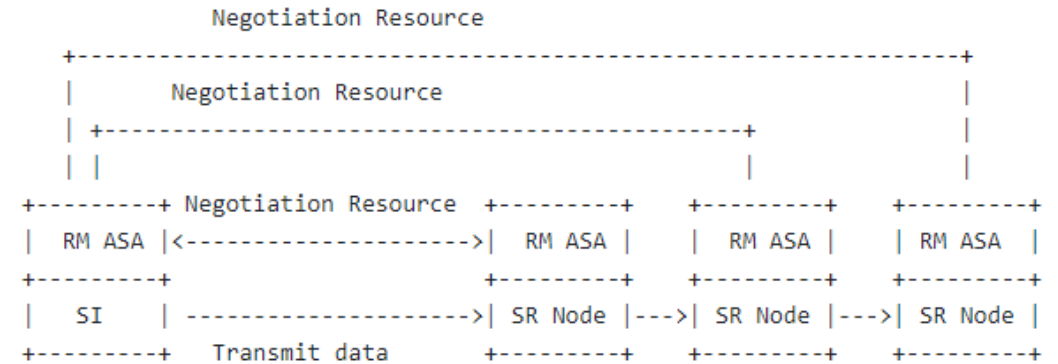
The format has been modified based on Brain's comments and will update in next version

Process of the Quality Network Transmission Service Auto-deployment

- Update the process of the Quality Network Transmission Service Auto-deployment
 - Service Initiator discovers a service path
 - The RM ASA on the Service Initiator negotiates resources with the RM ASAs on the Service Responders one by one
 - SI coordinates among SRs
 - Reserve the local resources



Discover the path for a Quality Transmission Service



IANA consideration

Two new subfields with their initial value tables

under "ResourceManager" Objective (defined in this document, too)

- Service Type (4-bits)
 - 0 : TransmissionService
 - 1 : ComputingService

- Resource Type (4-bits)
 - 0 : bandwidth
 - 1 : queue
 - 2 : memory
 - 3 : priority
 - 4 : cache
 - 5 : computing

Next Step

- Further rework the draft
 - Welcome to comments, contributions, reviews
 - Continue to refine the contents
 - An implementation plan using Python
 - Target for WGLC after IETF116

Thanks □