ROA with IRR

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What I want to share today:

- Two ideas for management logics of resource certificates

  ◦ Use of IRR for handy and legitimate information for certificates

  ◦ External RA for simple deployment

Agenda

- ## ROAs with IRR
  - Router operator's point of view

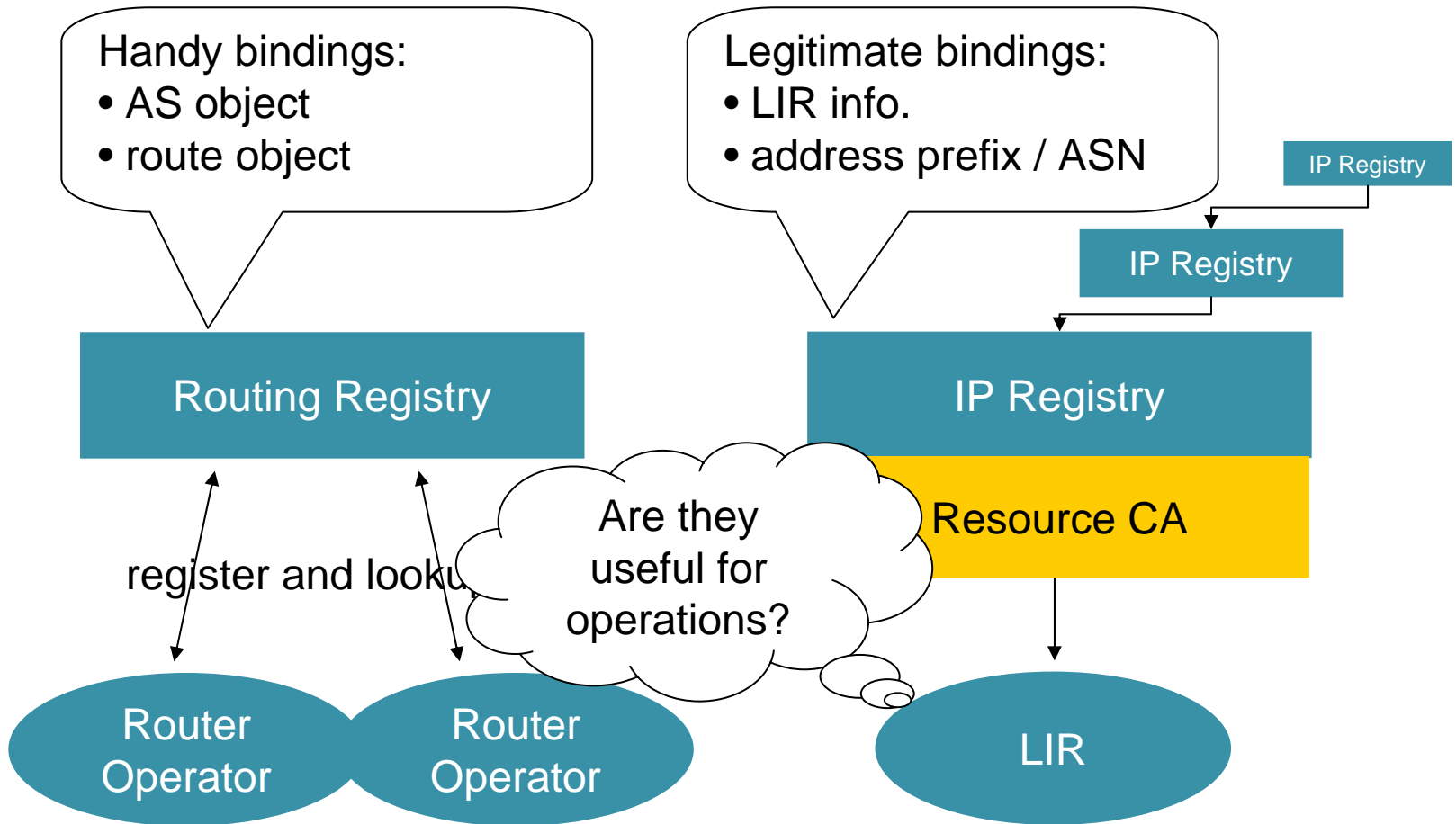# Operator's additional works

a.   Managing certificates from a registries (RIR/NIR)

b.   Managing certificates along with ROAs

- Route Origination Authorizations
  - ROAs means authorizations which are taken by LIRs (address space holders) to AS(es) to originate routes in the internet.

a. Managing resource cert.

- Resource certificates are better to be issued by an CA who has not only legitimate but also has handy information.

  - "legitimate" allocation and assignment
    - from RIR/NIR
  - "handy" routing information
    - in IRR (managed by ISPs)

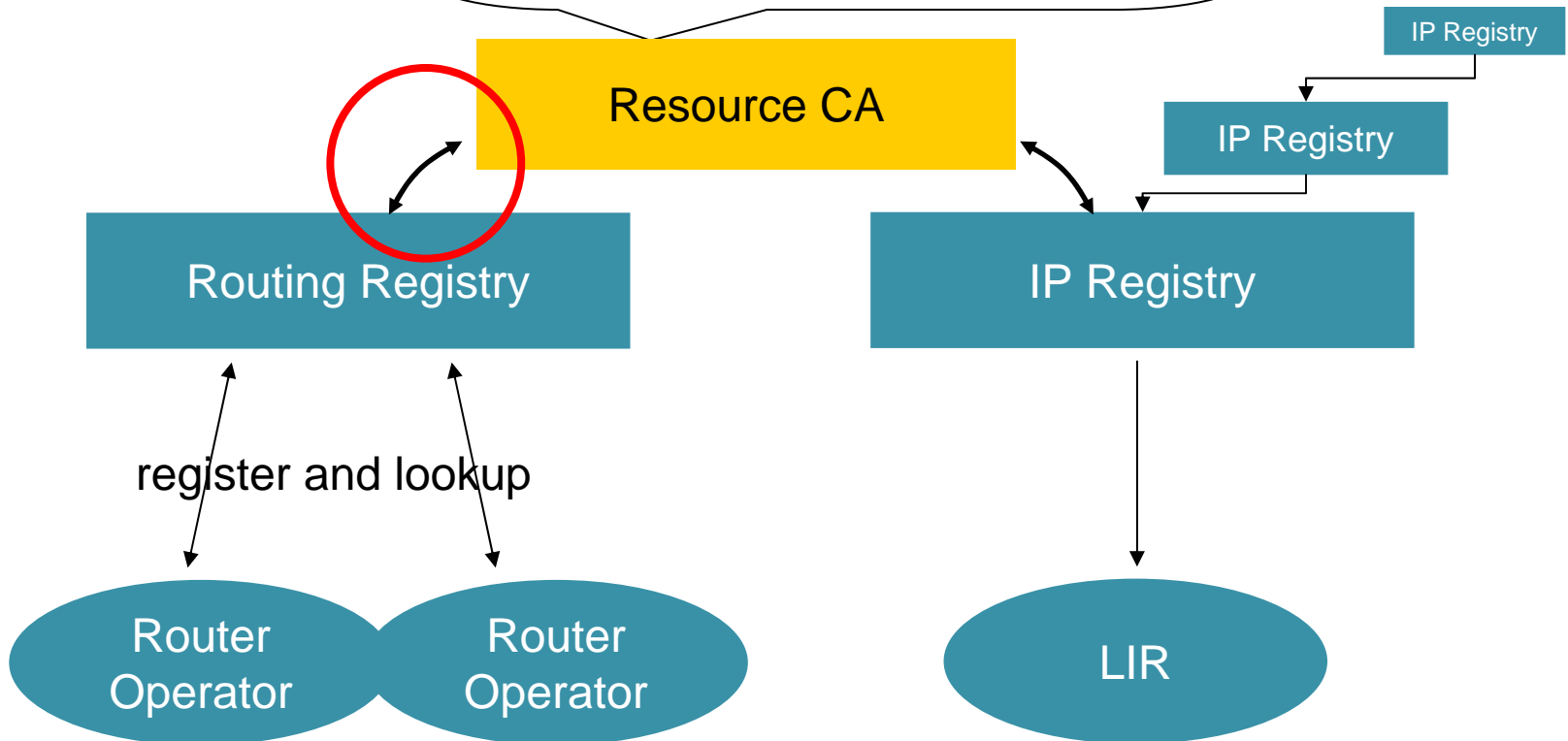   - "handy" is important factor for real deployment.

Handy vs. legitimate

Handy bindings:
- AS object
- route object

Legitimate bindings:
- LIR info.
- address prefix / ASN

IP Registry

IP Registry

Routing Registry

IP Registry

Resource CA

register and looku

Are they useful for operations?

Router Operator

Router Operator

LIR

Handy and legitimate

Handy and legitimate bindings:
- AS object / ASN
- address prefix / route objects

Resource CA

IP Registry

IP Registry

Routing Registry

IP Registry

register and lookup

Router Operator

Router Operator

LIR

b. Managing ROAs

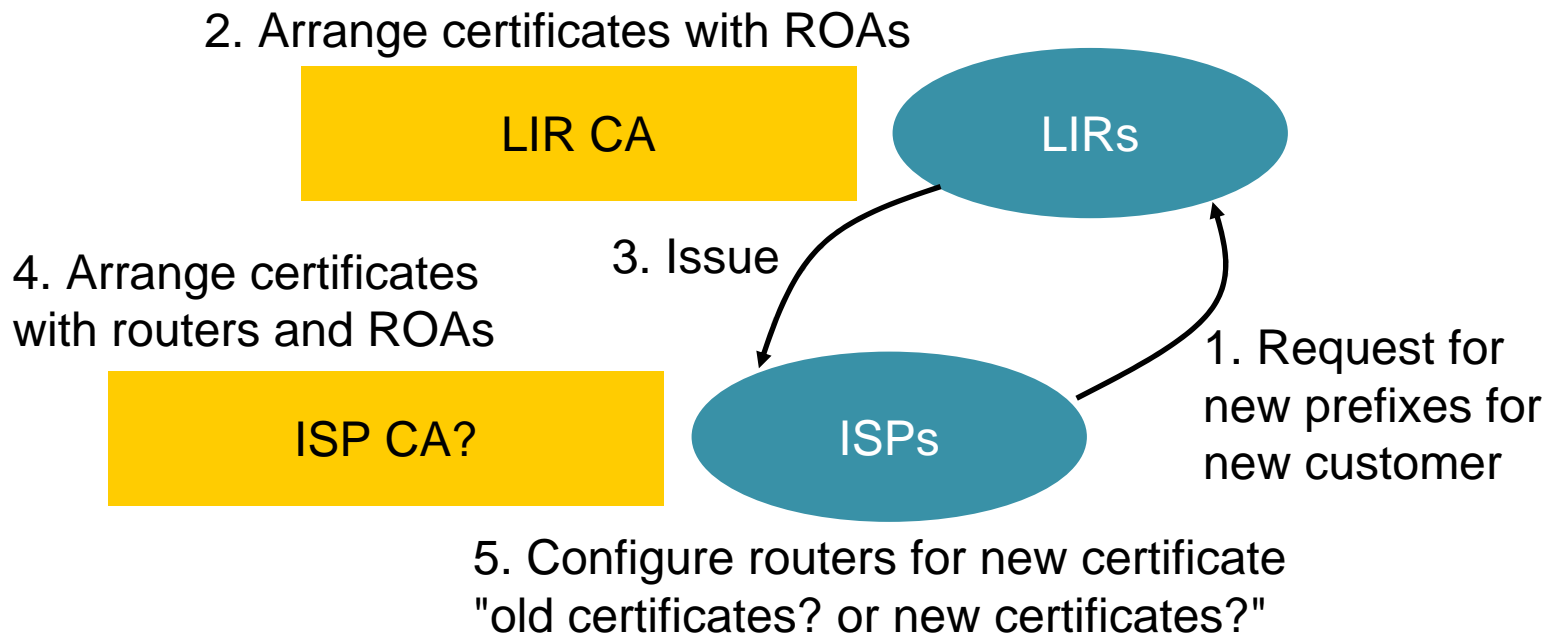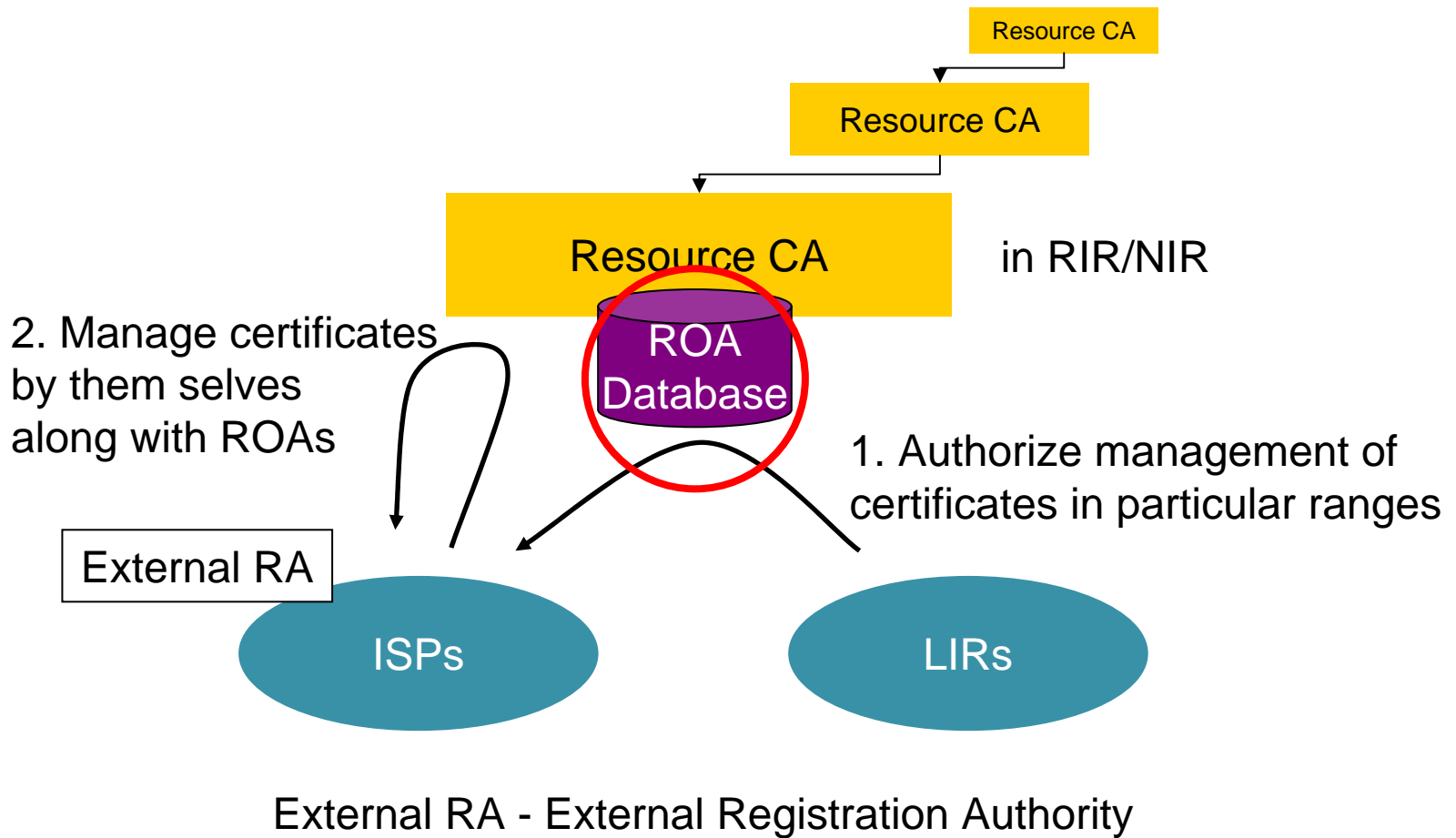| Whole range of address that one AS can advertise (in allocated range)	**>**	Address ranges that one certificate has

- Operators will need to manage prefixes in certificates along with ROAs.
  - This requires further certificate management system for operational use.

Complexity near the end of tree

- Each CA has to implement similar but different functions according to their roles.

2. Arrange certificates with ROAs

LIR CA

LIRs

3. Issue

4. Arrange certificates with routers and ROAs

ISP CA?

ISPs

1. Request for new prefixes for new customer

5. Configure routers for new certificate
"old certificates? or new certificates?"

Simplified deployment of CA

Resource CA

Resource CA

Resource CA   in RIR/NIR

ROA Database

2. Manage certificates by them selves along with ROAs

1. Authorize management of certificates in particular ranges

External RA

ISPs

LIRs

External RA - External Registration Authority

Summary

- Two ideas

  - Use of IRR for resource certificates
    - for handy certificates

  - External RA for ISPs
    - for simplified deployment

Cases in RIR

Routing Registry   IP Registry

Resource CA

NIR

LIR

Member's certificate for authentication
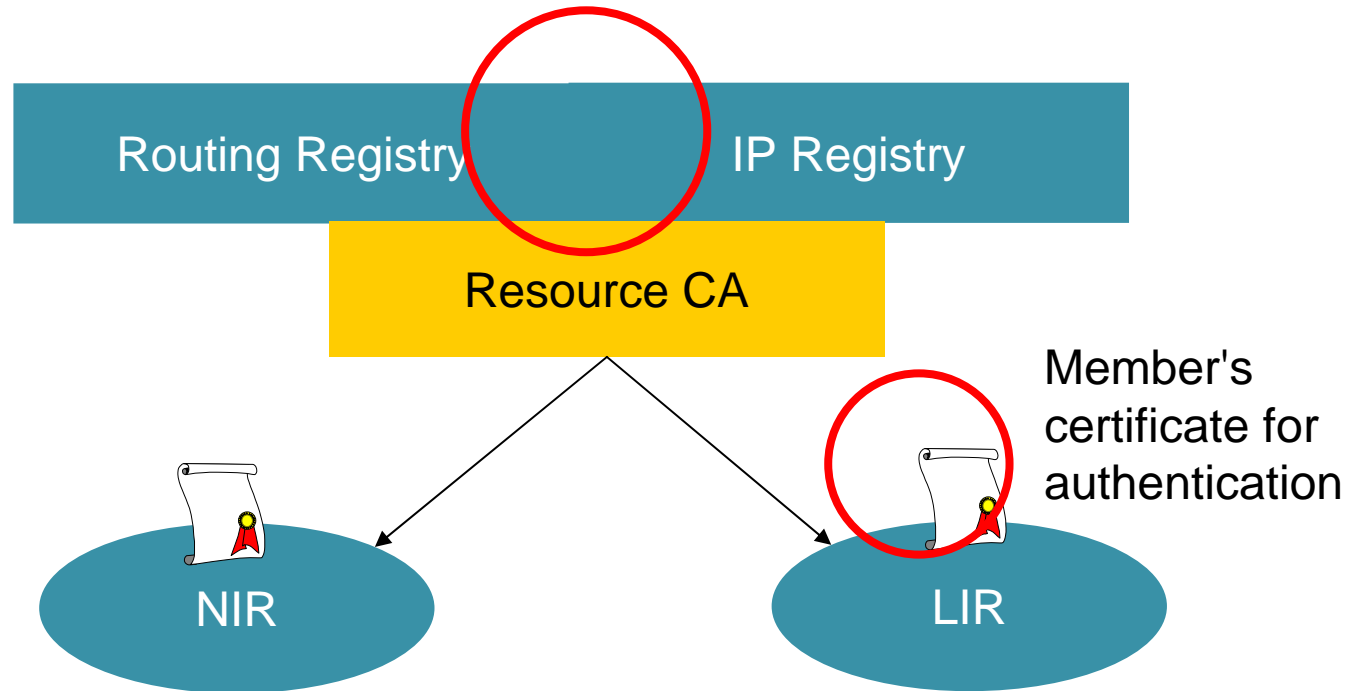
Questions?

Feel free to talk to me in the hall for further discussions.