



ROA Signing Party

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IRR Filters

```
bgpq3 -S ripe as-yandex | head  
ip prefix-list NN permit 5.45.192.0/18  
ip prefix-list NN permit 5.45.194.0/24  
ip prefix-list NN permit 5.45.196.0/24  
ip prefix-list NN permit 5.45.202.0/24  
ip prefix-list NN permit 5.45.205.0/24  
ip prefix-list NN permit 5.45.208.0/24  
ip prefix-list NN permit 5.45.208.0/26  
ip prefix-list NN permit 5.45.213.0/24  
ip prefix-list NN permit 5.45.217.0/24
```

IRR Filters

AS-SETs **can't be** used to:

- Perform origin validation;

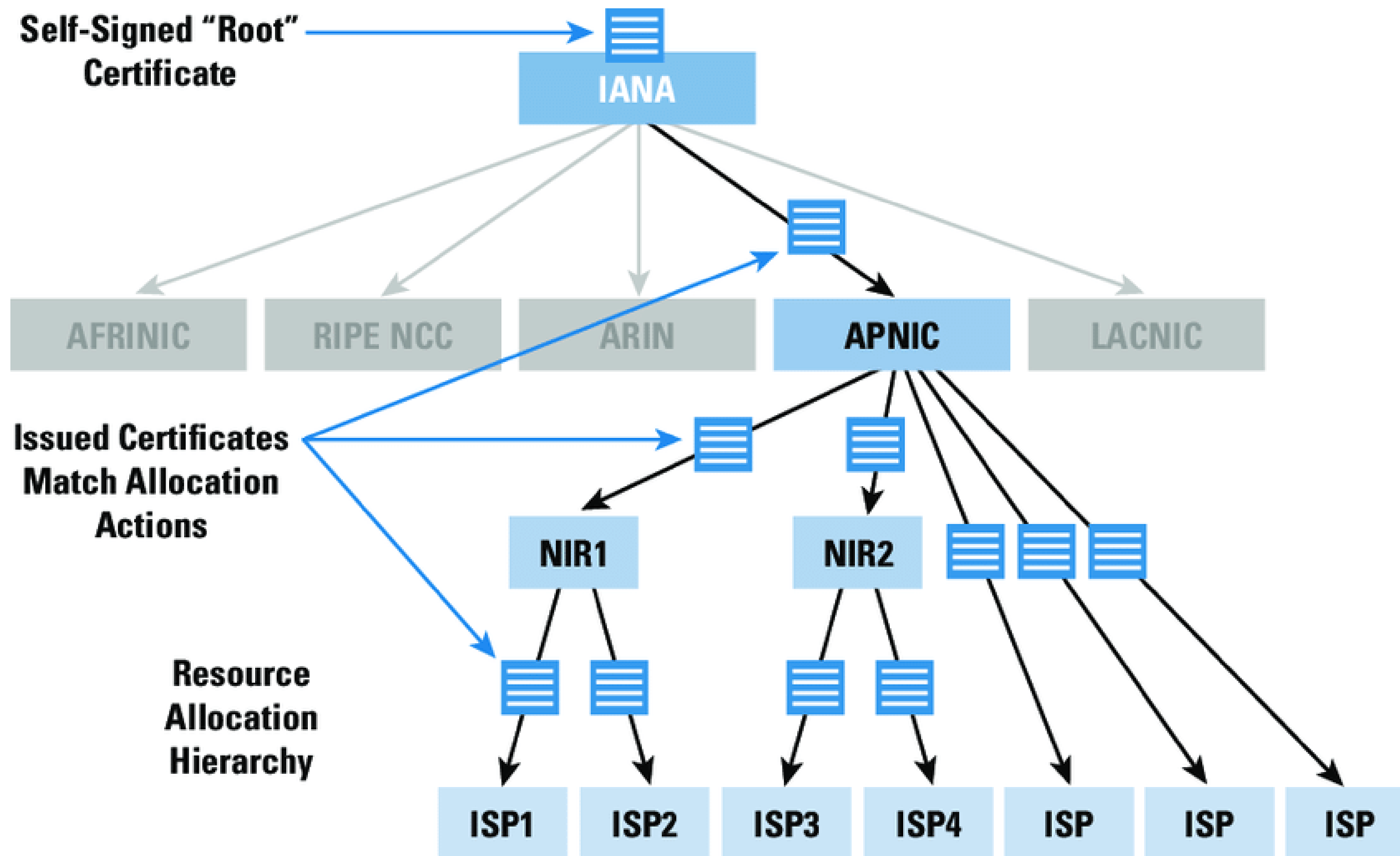
AS-SETs **can be** used to:

- Filter some hijacks;
- Filter some route leaks;

In reality:

- Many AS-SETs are **poorly maintained**;
- AS-SETs are **not authorized**;
- Unique naming between registries – of course **No!**

RPKI



ROA Example

Prefix: 5.45.192.0/19
ASN: 13238
Max_length: 23

For the purpose of this example

| ASN | Prefix | ROA Output |
|-------|---------------|------------|
| 13238 | 5.45.192.0/19 | Valid |
| 13238 | 5.45.192.0/20 | Valid |
| 13238 | 5.45.192.0/24 | Invalid |
| 15169 | 5.45.192.0/20 | Invalid |
| 15169 | 5.45.192.0/18 | Unknown |

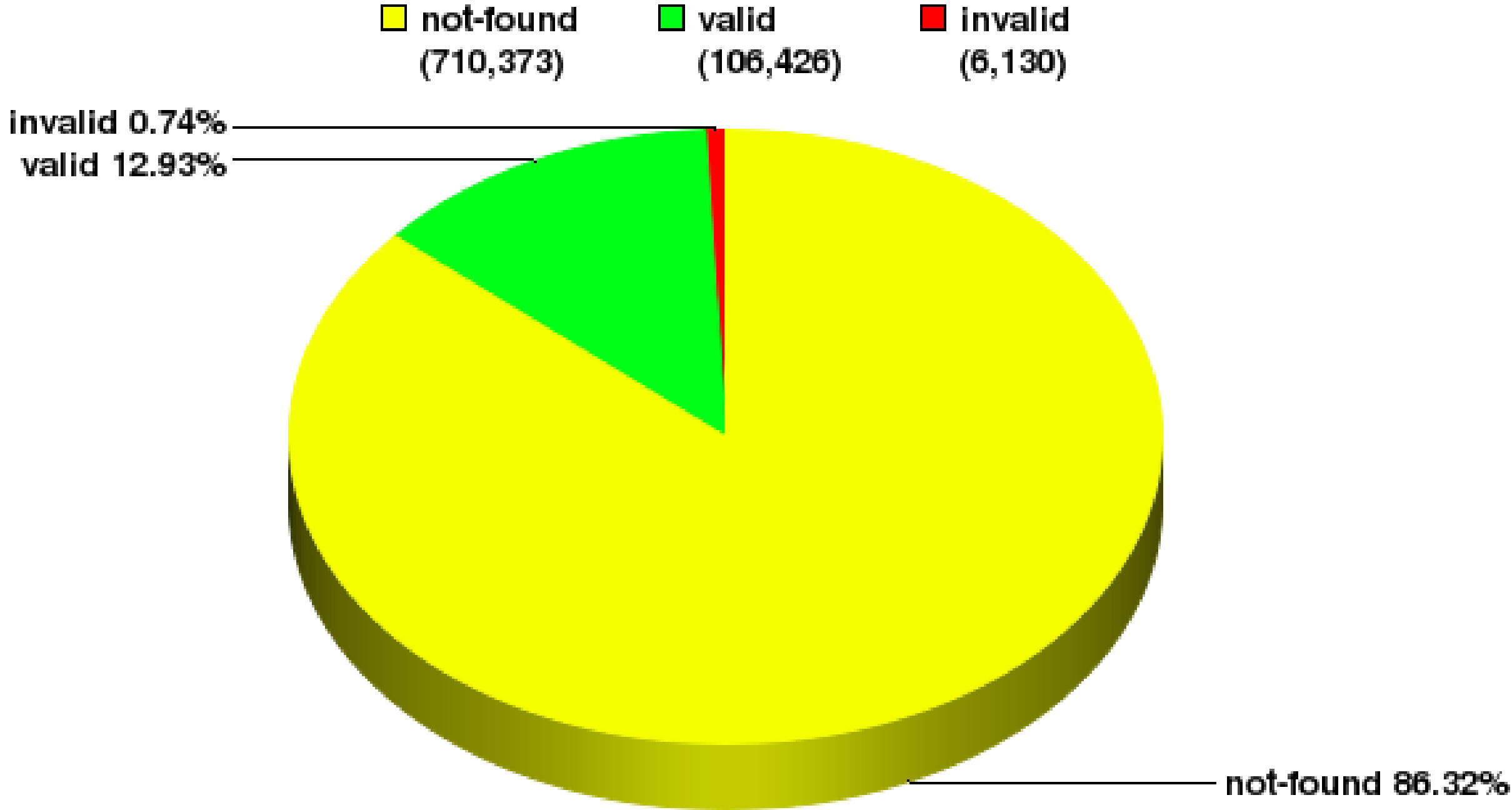
Wind of Change #2

- European IXes are already dropping **Invalids!**
- Some Tier1s are already dropping **Invalids**;
- **Content** is joining party. Yandex – 2019Q3.

Wind of Change #1

Global: Validation Snapshot of Unique P/O pairs

822,929 Unique IPv4 Prefix/Origin Pairs



ROA

ROA Validation **can't be** used to:

- filter route leaks;
- filter malicious hijacks.

ROA Validation **can be** used to:

- filter mistake hijacks;

In reality:

- Reality is changing now!

How to Sign a ROA?

It's simple:

1. <https://my.ripe.net/#/rpki>
2. Sign only aggregates (inetnum);
3. Set max_length to 32 in IPv4 (128 in IPv6);

Useful links

ROA Verification:

- <http://localcert.ripe.net:8088/bgp-preview>
- <https://radar.qrator.net>
- <https://bgp.he.net>

Route Validation:

- [RIPE RPKI Validator](#)
- [Routinator 3000](#)