

RPKI/ROV data analysis with detailed characterization of Invalid routes

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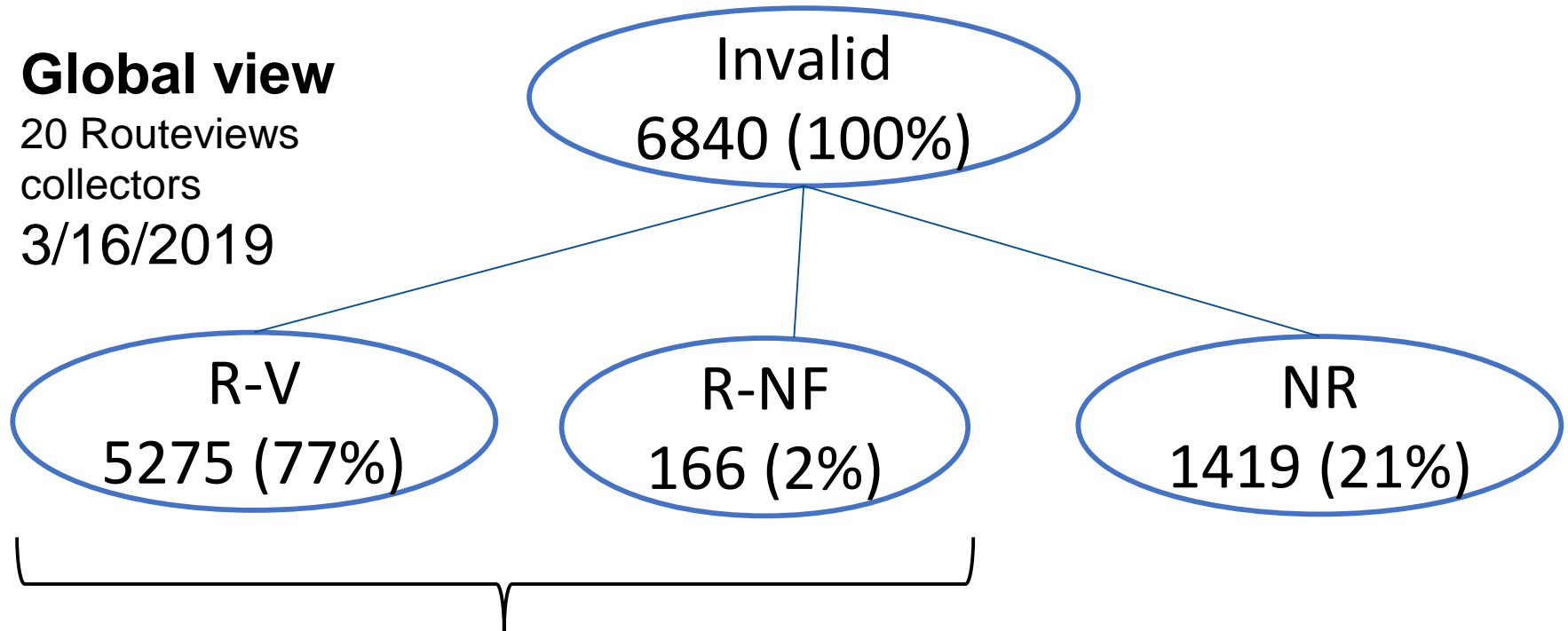
**IETF SIDROPS Meeting
IETF 104
Prague, Czech Republic
March 2019**

Invalid routes – if dropped, is traffic still routable to covering Valid or NotFound?

Global view

20 Routeviews
collectors

3/16/2019



Covering V or NF routes (79%)

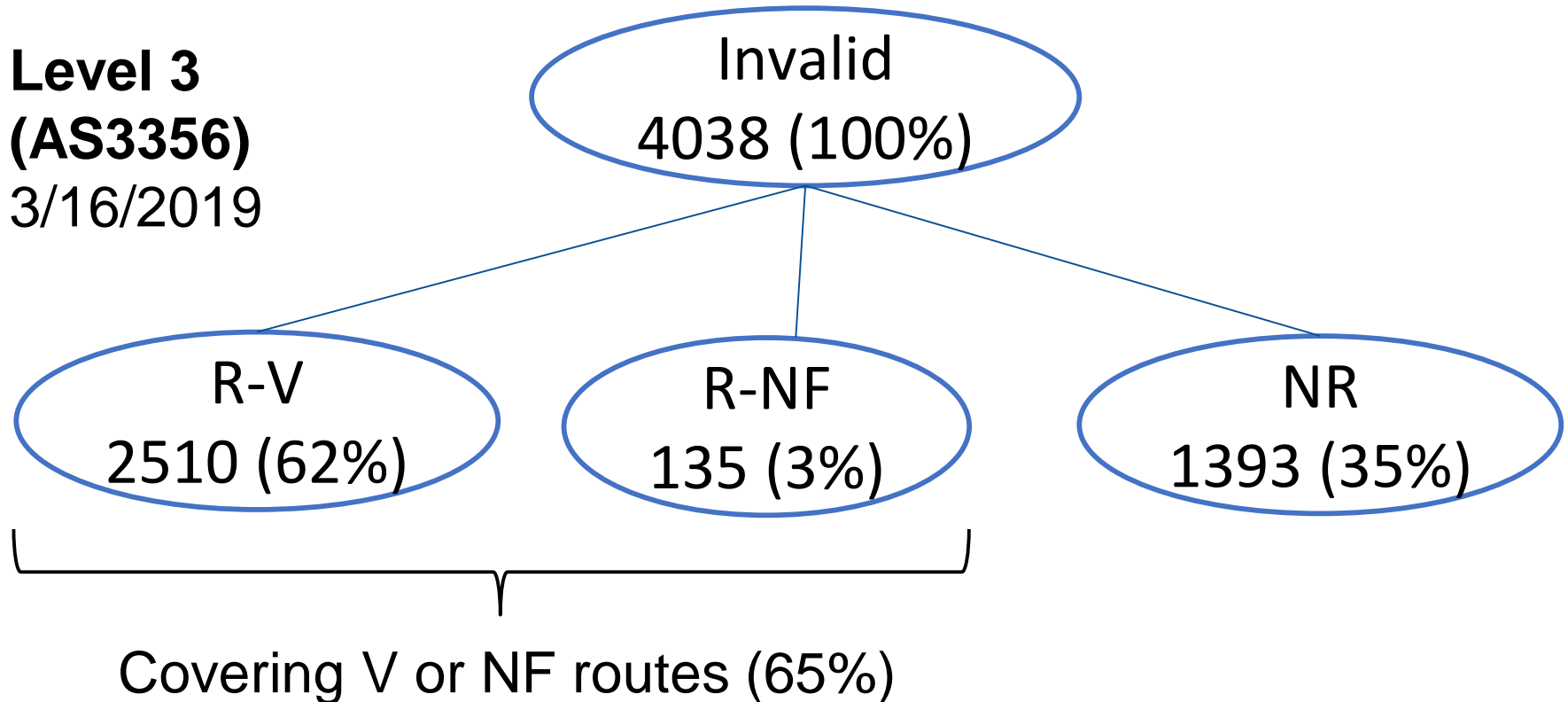
R-V: Routable to Covering Valid

R-NF: Routable to Covering NF

NR: Not Routable to Covering V or NF

Invalid routes – if dropped, is traffic still routable to covering Valid or NotFound?

Level 3
(AS3356)
3/16/2019



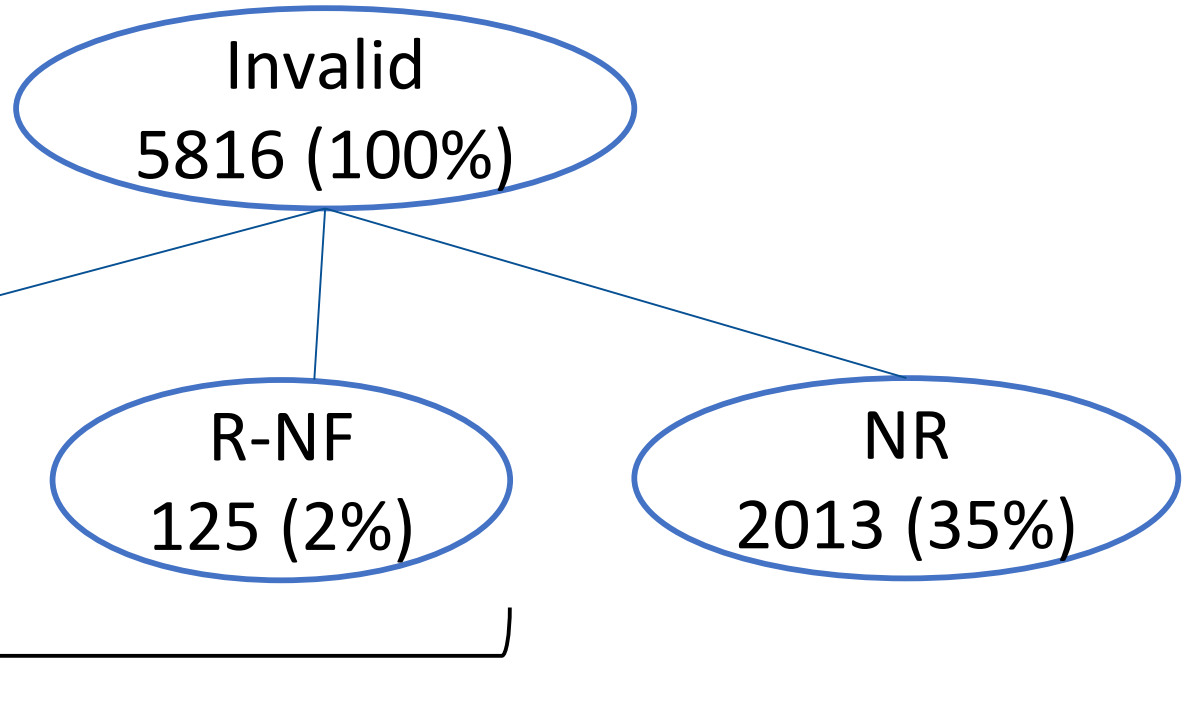
R-V: Routable to Covering Valid

R-NF: Routable to Covering NF

NR: Not Routable to Covering V or NF

Invalid routes – if dropped, is traffic still routable to covering Valid or NotFound?

AT&T (before*)
(AS7018)
12/13/2018



Covering V or NF routes (65%)

* Before/After relative to AT&T dropping Invalid routes from peers starting in February 2019

Invalid routes – if dropped, is traffic still routable to covering Valid or NotFound?

AT&T (after*)
(AS7018)
3/16/2019

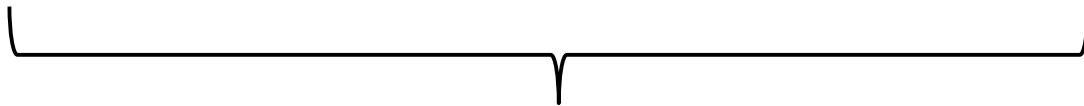
Invalid
192 (100%)

AT&T is not dropping
Invalid routes from
customers.

R-V
171 (89%)

R-NF
4 (2%)

NR
17 (9%)



Covering V or NF routes (91%)

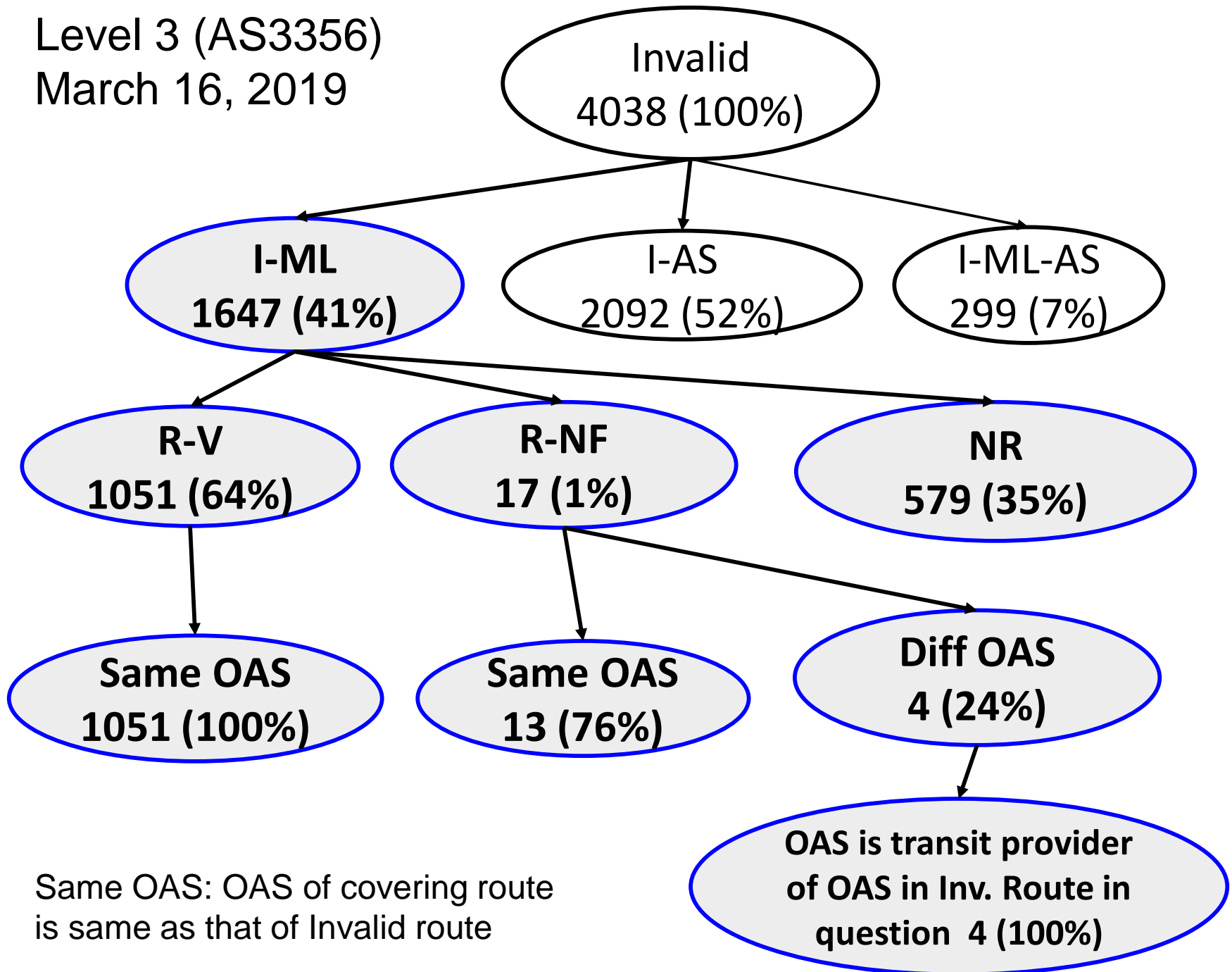
* Before/After relative to AT&T dropping Invalid routes from peers starting in February 2019

Detailed Analysis of Invalid Routes

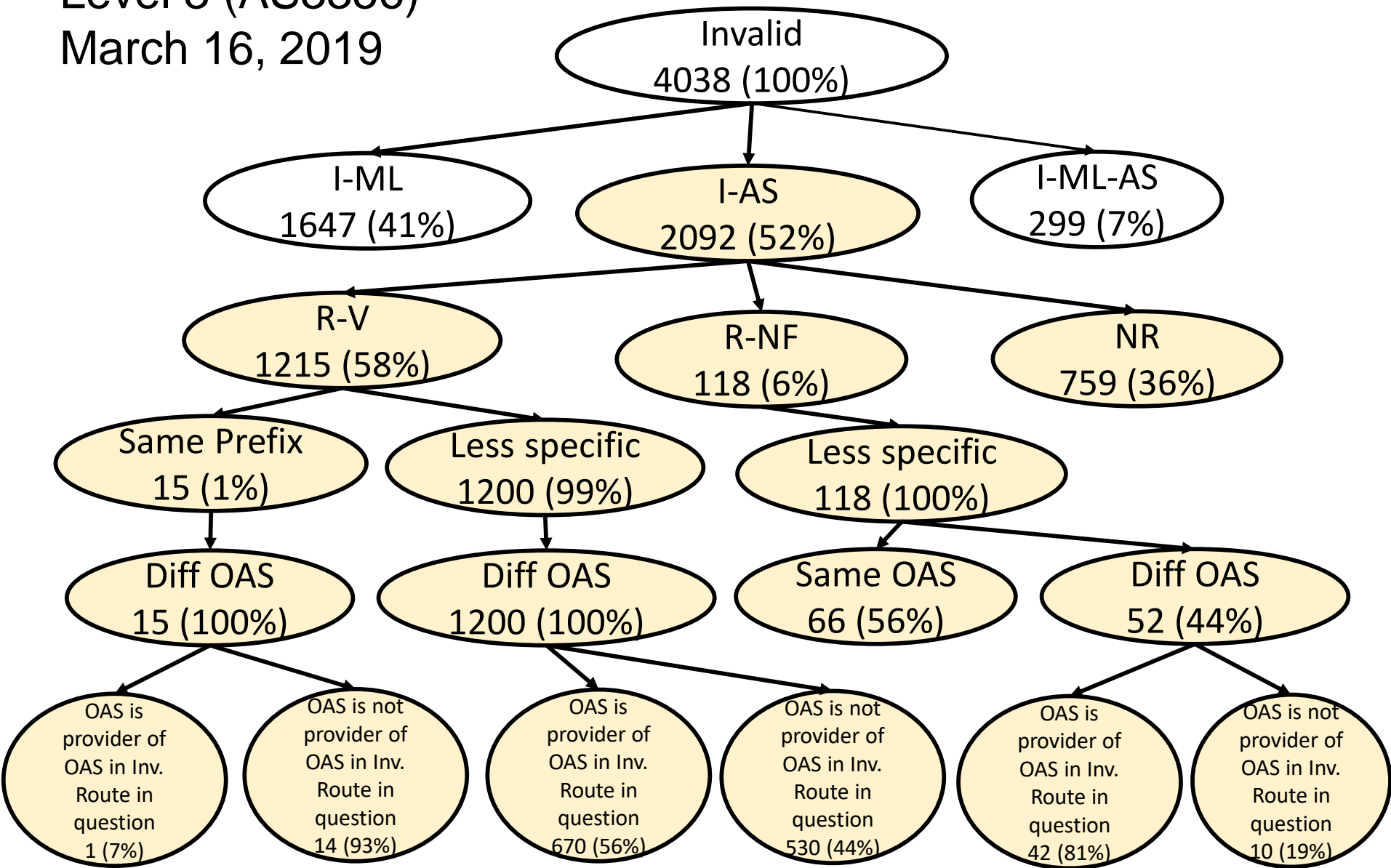
More Definitions:

- I-ML: Route is Invalid only due to prefix length $>$ maxlength
- I-AS: Route is Invalid only due to AS mismatch
- I-AS-ML: Route is Invalid due to both reasons
- Same OAS: OAS of the covering route is the same as that of the Invalid route
- Diff OAS: OAS of the covering route is different from that of the Invalid route
 - ❖ If Diff OAS, is the Diff OAS the transit provider of the OAS in the Invalid route?

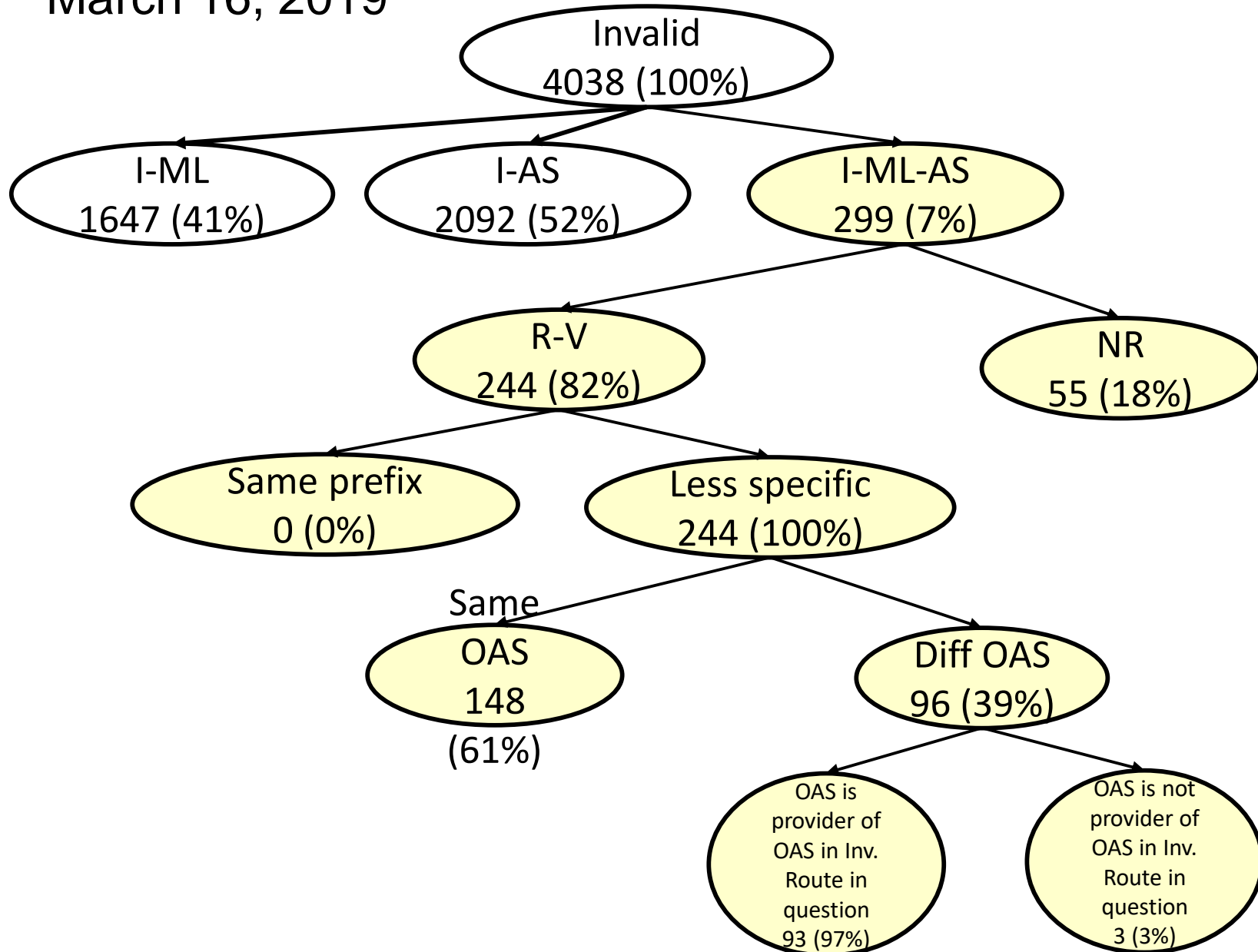
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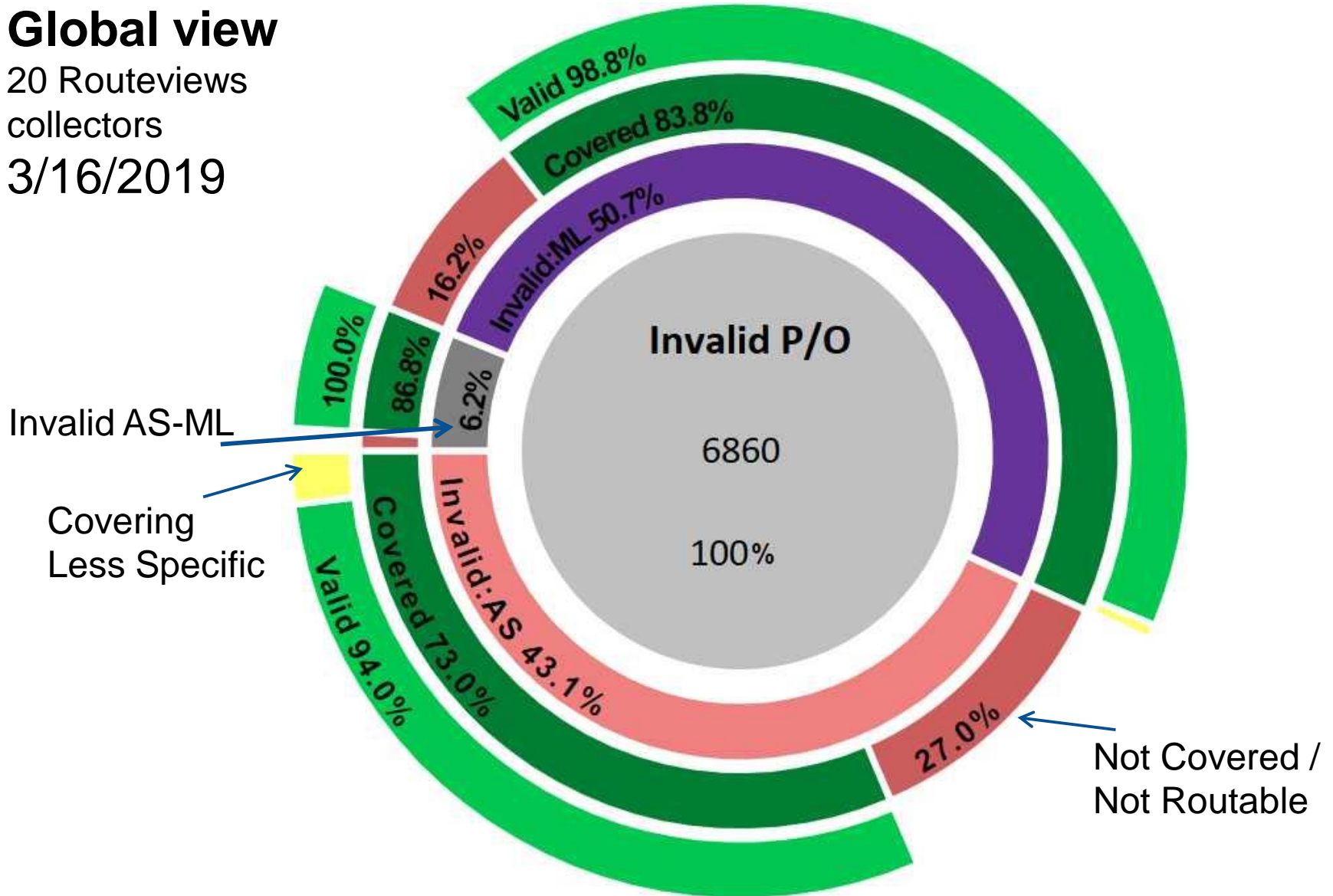


Preview of NIST RPKI Monitor 2.0

Global view

20 Routeviews
collectors

3/16/2019



Preview of NIST RPKI Monitor 2.0

Level 3
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