

Research and Innovation

By

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AFRINIC

23



POINTE
NOIRE

28 NOVEMBER - 4 DECEMBER
2015



Department objectives

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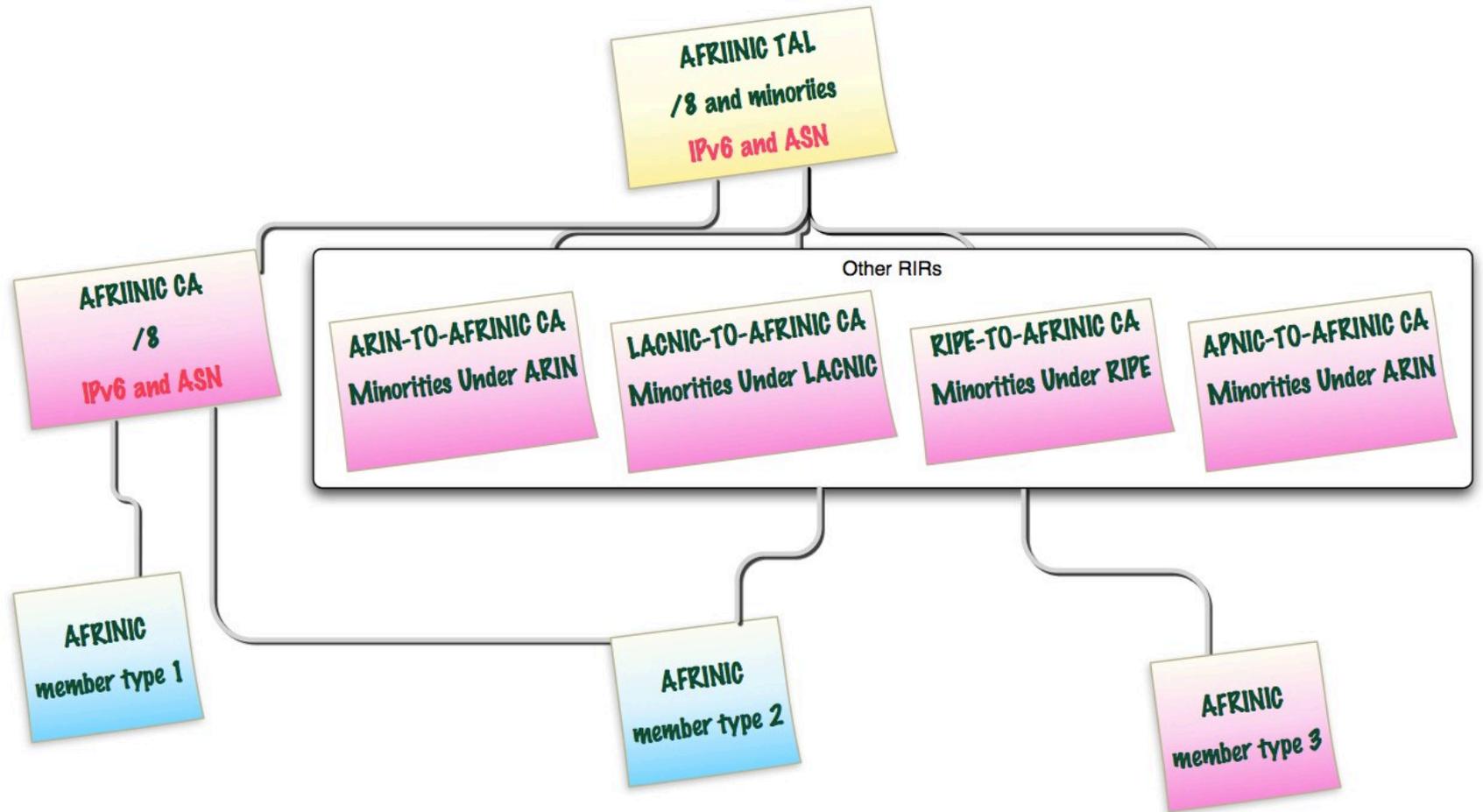
- RPKI v2.0 Project: New RPKI system
- DNSSEC v2.0 Project: New DNSSEC signer
- IETF activities: Identity and join key WGs and RGs
- African Internet Resources and Routing Statistics (AIRRS)
- Internet measurements: Continue RIPE Atlas probes and anchors distribution.
- Research articles



RPKI v2.0 improvements

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- Split production certificates
- 'Split ROA' handling
- Changes to MyAFRINIC RPKI section
- Changes to IRDB
- Hierarchical repository
- CPS mentioned in certificates RFC xxxx



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- Deployed since Jan 2011
- 38 members enrolled, 47 ROAs

RIR	Total	Valid	Invalid	Unknown	Accuracy	RPKI Adoption Rate
AFRINIC	12915 (100%)	52 (0.4%)	55 (0.43%)	12808 (99.17%)	48.6%	0.83%
APNIC	144012 (100%)	1397 (0.97%)	665 (0.46%)	141950 (98.57%)	67.75%	1.43%
ARIN	207276 (100%)	1365 (0.66%)	339 (0.16%)	205572 (99.18%)	80.11%	0.82%
LACNIC	73871 (100%)	17803 (24.1%)	870 (1.18%)	55198 (74.72%)	95.34%	25.28%
RIPE NCC	147902 (100%)	13347 (9.02%)	1291 (0.87%)	133264 (90.1%)	91.18%	9.9%

Source: <http://rpki.surfnet.nl>, may 2015



- Deployed since May 2015
- 34 members, 72 ROAs

10 records per page Search:

RIR	Total	Valid	Invalid	Unknown	Accuracy	RPKI Adoption Rate
AFRINIC	13909 (100%)	157 (1.13%)	5 (0.04%)	13747 (98.84%)	96.91%	1.16%
APNIC	154812 (100%)	3096 (2%)	1143 (0.74%)	150573 (97.26%)	73.04%	2.74%
ARIN	217369 (100%)	1732 (0.8%)	355 (0.16%)	215282 (99.04%)	82.99%	0.96%
LACNIC	74766 (100%)	13143 (17.58%)	739 (0.99%)	60884 (81.43%)	94.68%	18.57%
RIPE NCC	156926 (100%)	16110 (10.27%)	1196 (0.76%)	139620 (88.97%)	93.09%	11.03%

Source: <http://rpki.surfnet.nl> November 2015



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- New Signer for:
 - 41.in-addr.arpa.
 - 196.in-addr.arpa.
 - 197.in-addr.arpa.
 - 102.in-addr.arpa.
 - 105.in-addr.arpa.
 - 154.in-addr.arpa.
 - 0.c.2.ip6.arpa.
 - 3.4.1.0.0.2.ip6.arpa.
 - 2.4.1.0.0.2.ip6.arpa.
- AFRINIC RDNS and AFRINIC managed zones signed;
 - *.afrinic.net with TLSA records
 - AFRINIC Ops RDNS zones follow

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- Six members with 253 DS records(216 distinct) :

AFRINIC - 2

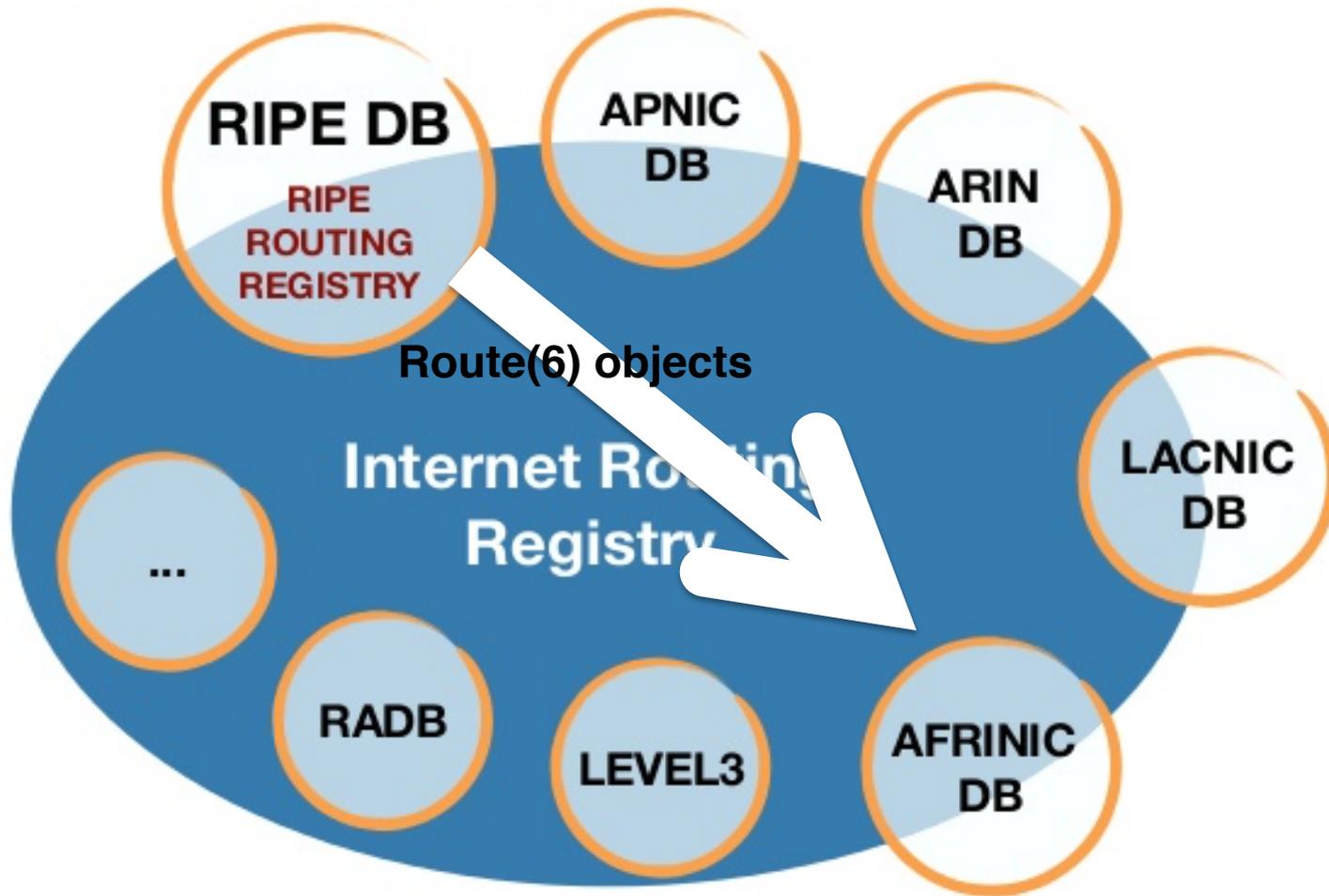
ATI - Agence Tunisienne Internet - 176

CBC EMEA LTD - 1

Posix Co Ltd - 48

RMS Powertronics CC - 22

Rhodes University - 4





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- IRR data authenticity and accuracy
 - Attach RR object to allocating RIR
 - Move AFRINIC IRR objects home from RIPE RR
 - Smooth and well synchronized transfer
 - How to handle authentication of out-of-region resources during RR objects creation ?
 - RPSL with RPKI signatures ?
 - RPSL-bis ?



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Spam from an INRM perspective

- Importance of sensitising our community
- INRM perspective
 - Abuse contact information policy
 - Proper registration of ASSIGNED PA
 - Importance of reverse DNS and No-Reverse u.a policy
 - RPKI and IRR against hijacked networks
- Resources mostly under-utilised:
 - Only **11%** of WHOIS objects have an **Abuse contact**
 - Abuse Contact Information Policy – **not used at all**
 - RPKI uptake still **weak**



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IPv4 geolocation

- Method: Use allocations/assignments from whois et geolocate them against Maxmind country lite database
 - Total IP count : 83295979
 - Total IP seen in Africa: 82774697
 - % in Africa: 99.3742

Thank you
for your
Attention

Questions?



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