



RIPE NCC
RIPE NETWORK COORDINATION CENTRE

RIPE NCC Operational Update

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Chief Operations Officer

RIPE 85 | 26 October 2022



Service Levels

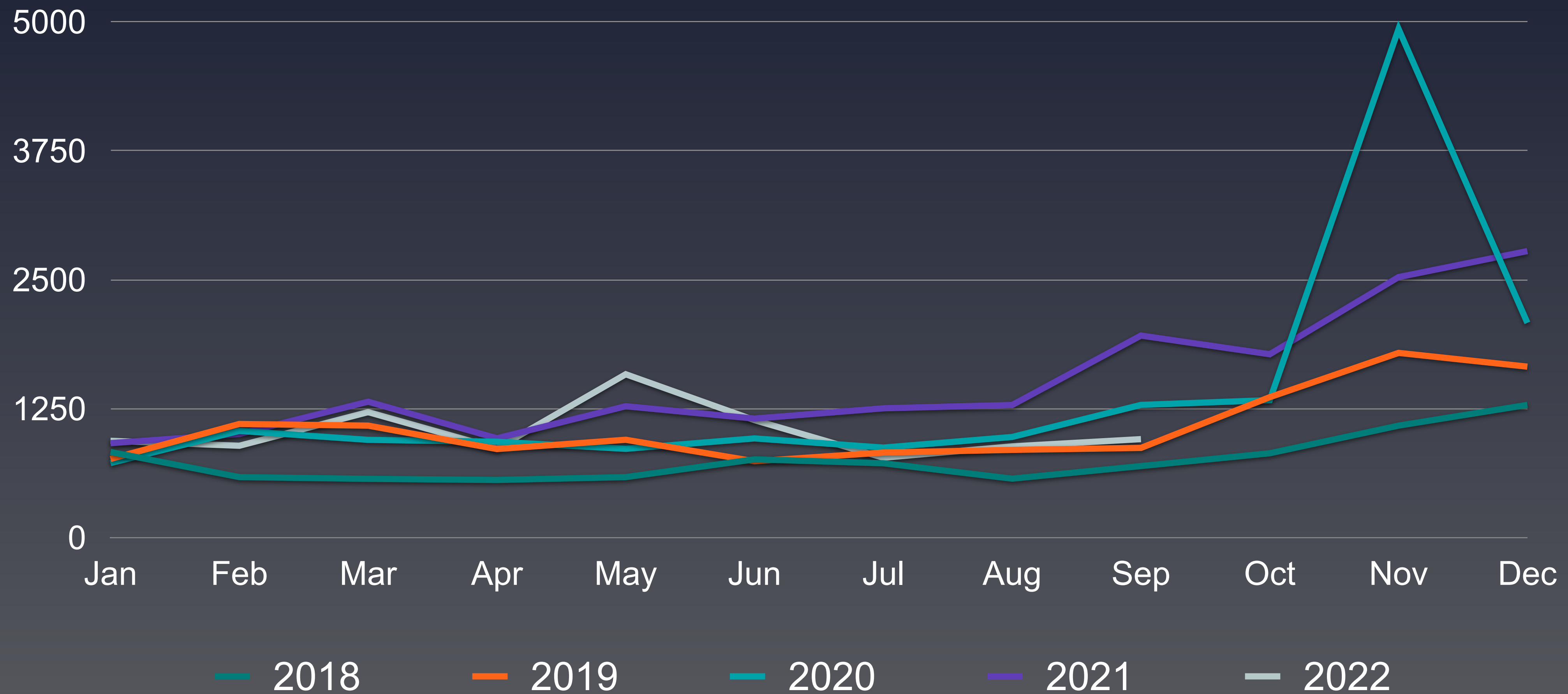
Delivering world-class services

Objective



- Deliver world-class services to our members
 - NPS score > 80
 - CES > 6.5
 - % tickets responded within 1 day = 100%

Resource update tickets over time

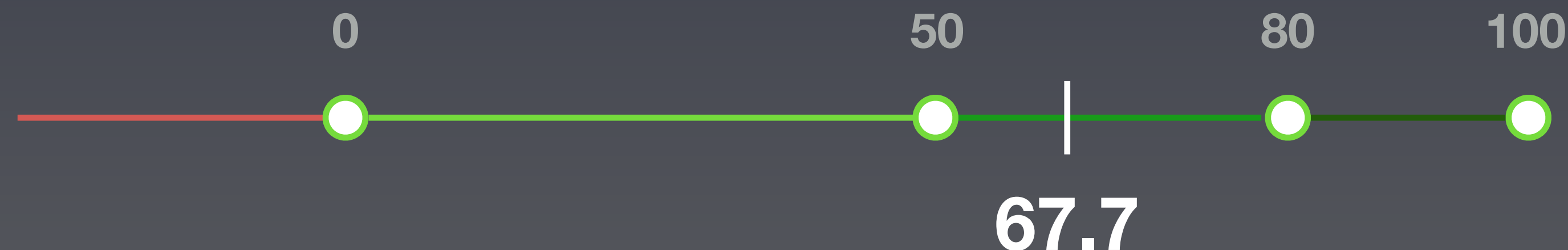


Net Promoter Score (NPS)



How likely are you to speak highly of the RIPE NCC to your friends and colleagues?

- Total score Q3: 67.7 (350 responses)



Customer Effort Score (CES)



To what extent do you agree or disagree with this statement?
"The RIPE NCC made it easy to handle my issue."

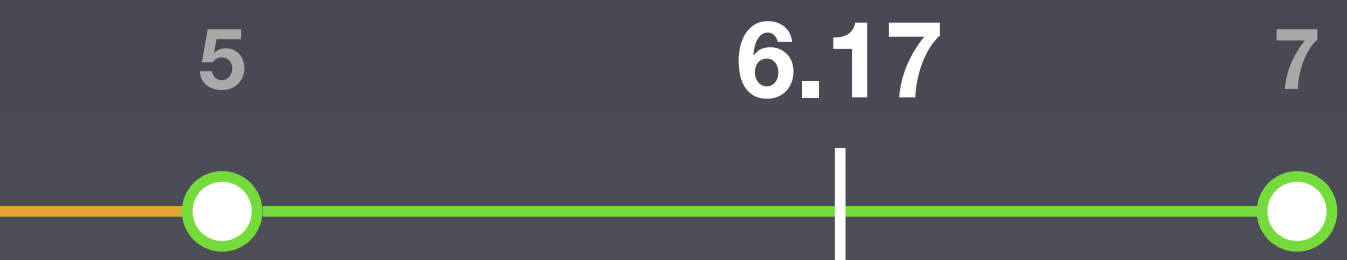
Registry Update



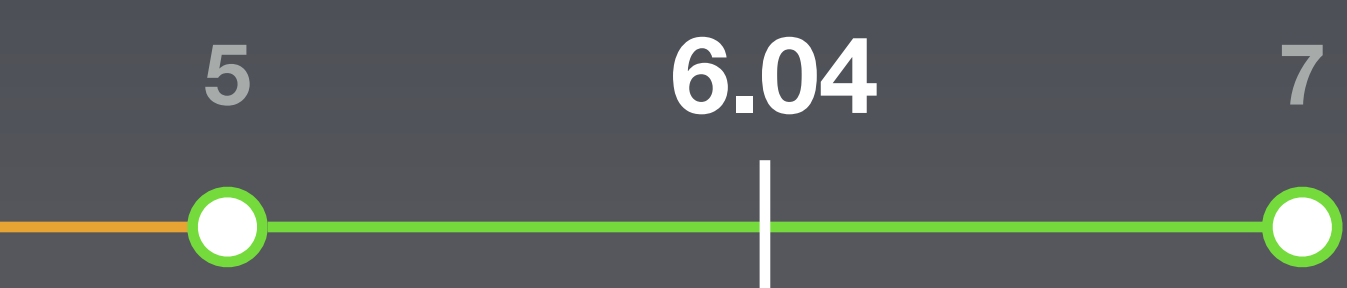
Member Update



New LIR

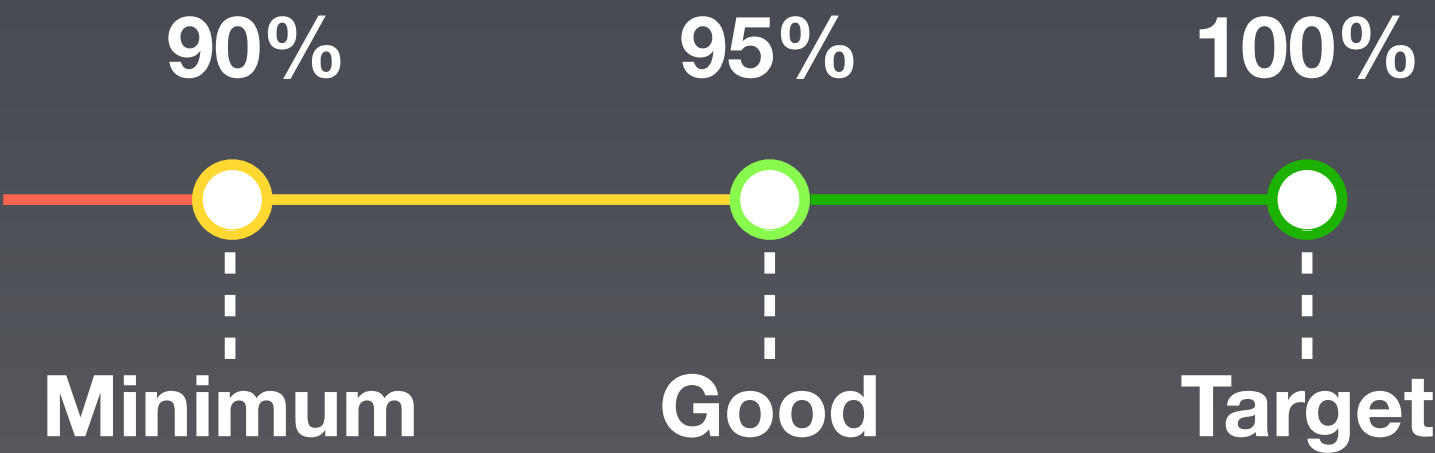


Billing



% Tickets Responded Within One Day

	Jan	Feb	Mar	Apr	May	June	Jul	Aug	Sep
%	96.4%	98.3%	79.6%	92.5%	95.6%	97.3%	94.1%	99.1%	96.7%
# not responded	141	67	1082	393	241	89	181	33	121
Total	3890	3572	5241	4949	5918	3590	3053	3498	3718



Summary



- Average number of tickets reduced when compared to previous years
 - That is allowing us to focus on service quality and accuracy of the registry
- Service quality (when measured by NPS and CES) are at excellent levels
 - Some issues identified in billing tickets
 - Project in progress in order to fix root cause before next billing cycle
- Bumps in ability to deal with all tickets are concentrated in specific areas and times
 - Reshuffling work between teams in order to address this



Registry Accuracy and Compliance

Quality registry data

Objective



- Ensure a highly accurate and compliant registry
 - All members verified every five years
 - All end-users verified every five years
 - # completed ARCs > 200
 - % members with inaccurate data (found during ARCs) < 1%

% Members Verified



	Q2 2021	Q3 2021	Q4 2021	Q1 2022	Q2 2022	Q3 2022
< 2 years	9,592 (47.5%)	9,872 (48.6%)	9,364 (46.8%)	9,283 (45.8%)	10,273 (50.4%)	10,694 (52.5%)
2-5 years	5,630 (27.9%)	6,141 (30.3%)	6,466 (32.3%)	6,906 (34%)	6,918 (33.9%)	7,182 (35.3%)
> 5 years	4,995 (24.7%)	4,285 (21.1%)	4,186 (20.9%)	4,100 (20.2%)	3,192 (15.7%)	2,493 (12.2%)
#	20,153	20,298	20,016	20,289	20,383	20,369

% End Users Verified

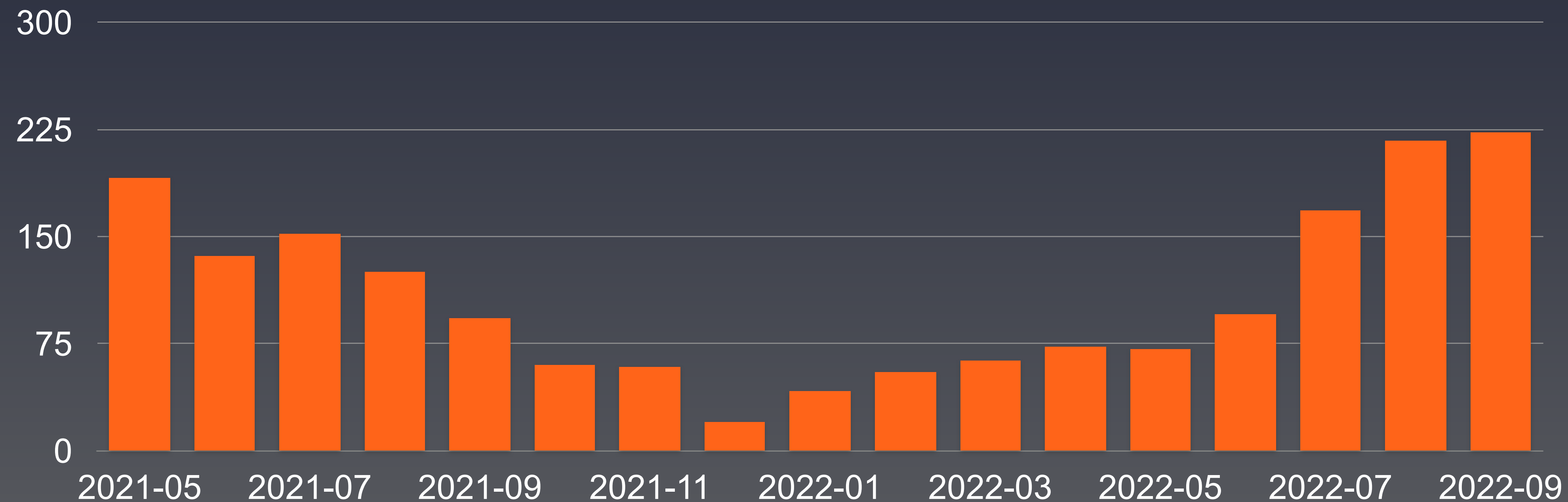


	Q2 2021	Q3 2021	Q4 2021	Q1 2022	Q2 2022	Q3 2022
< 2 years	5,109 (25.6%)	9,347 (47.4%)	12,971 (65.9%)	15,525 (79.3%)	15,589 (79.5%)	15,650 (80.2%)
2-5 years	3,686 (18.5%)	3,127 (15.8%)	1,992 (10.1%)	1,229 (6.2%)	1,318 (6.7%)	1,342 (6.9%)
> 5 years	11,173 (55.9%)	7,252 (36.8%)	4,717 (24%)	2,826 (14.5%)	2,714 (13.8%)	2,523 (12.9%)
#	19,968	19,726	19,680	19,580	19,599	19,515

Number of ARCs Completed



- ARCs are our audit activity that aim to ensure quality registry data and good understanding of our services



% Inaccuracies (New Metric)



- When auditing a member, we verify their information against official sources (e.g. online registries)
- Sometimes, member's company information in the registry turns out to be incorrect
 - For instance, the member's legal entity went into an M&A

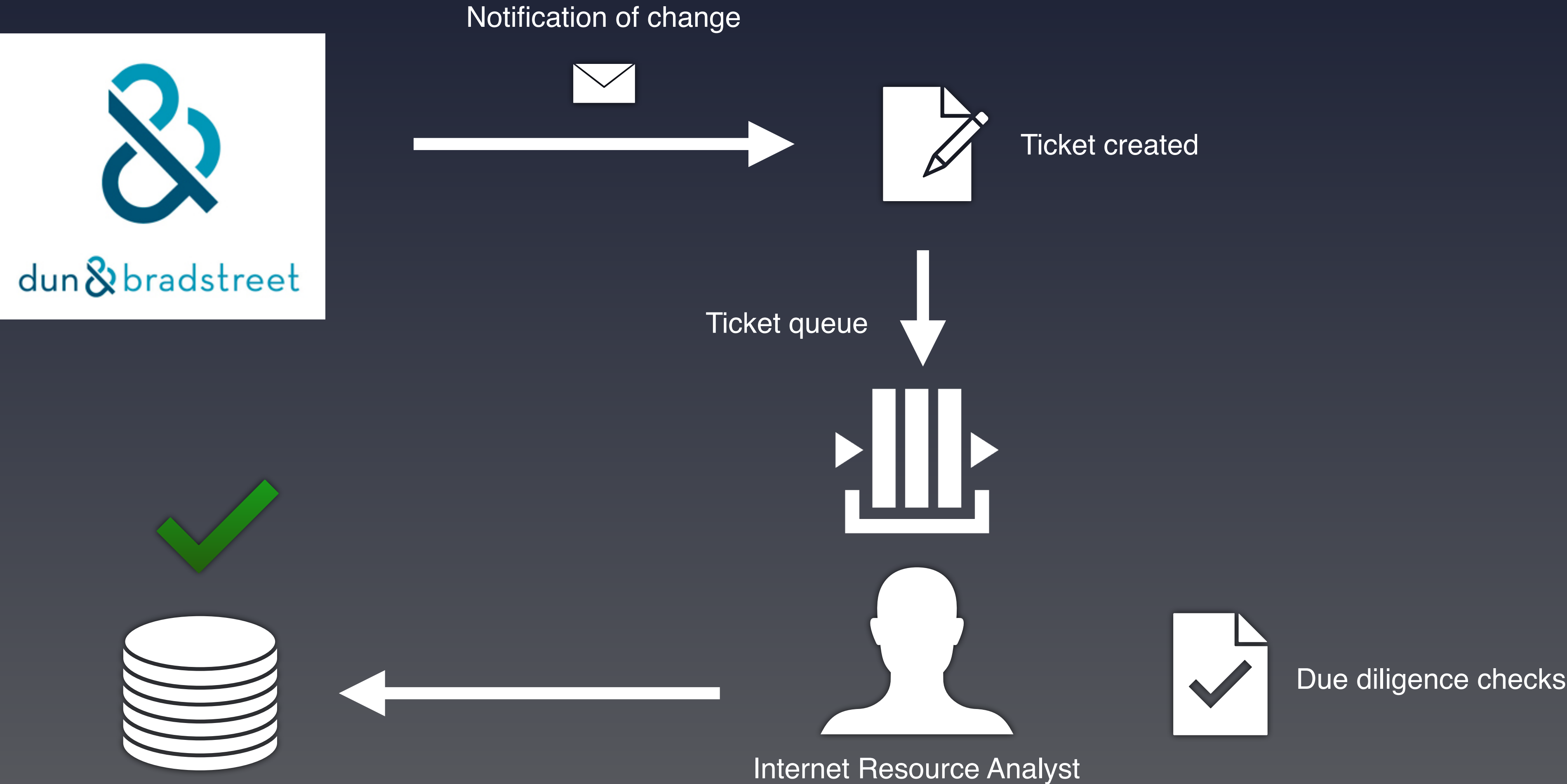
	August 2022	September
M&As	2 (0.92%)	0%
Legal name	7 (3.23%)	10 (4.48%)
Legal address	39 (17.9%)	16 (7.17%)
Closed companies	2 (0.92%)	0%
#	217	223

Monitoring Registry Accuracy



- We use Dun & Bradstreet and Dow Jones tooling to ensure our EU sanctions compliance
- Every time a member is added to the EU sanctions list, we receive a notification and start investigating
- The same tooling is now also used to monitor against changes in the legal structure of companies
 - E.g. member goes into liquidation, bankruptcy, M&A or legal name change
- By processing these changes proactively, we avoid often painful and slow updates in the future, due to the difficulty in getting the right information
 - E.g. M&A that took place ten years ago and it is now hard to get the right signatures and documents

Monitor Registry Accuracy



Sanctions Transparency Report



- Provides data on how RIPE NCC members, End Users and legacy resource holders are affected by sanctions, while respecting confidentiality and privacy
- <https://www.ripe.net/publications/docs/ripe-784/>

Date	Action	Relation	Country	IPv4	IPv6	ASN
01-Apr-20	Frozen	Member	IR	17,408	/32	1
01-Apr-20	Frozen	Member	SY	230,400	/29	1
20-Apr-2022	Frozen	Member	RU	7,552	/32	5
20-Apr-2022	Frozen	Member	RU	4,096	/32	5
13-May-2022	Frozen	End-user	RU	0	0	1
26-Jul-2022	Frozen	Member	RU	1,024	/29	1
17-Oct-2022	Frozen	Member	GE	1,024	/29	2
17-Oct-2022	Frozen	Member	RU	6,400	/29	10
				267,904	/27, /31, /32	35



Cases Under Investigation

- Large number of potential matches that require manual investigation by RIPE NCC staff
- Because there is no grace period allowed for sanctions compliance, potential matches must be treated as though they are sanctioned until our staff can confirm otherwise

Date	Total alerts	Not yet started	Under investigation	Confirmed false positive or sanctions not applicable to RIPE NCC services	Confirmed sanctioned and applicable to RIPE NCC services
20-Apr-2022	766	362	173	227	4
01-Jul-2022	843	309	207	323	4
17-Oct-2022	932	368	184	372	8

Summary



- We have hard metrics and targets to measure the accuracy of the registry
- In order to improve on those, we are aiming for two strategies
 - Increase number of ARCs in order to verify all members every five years
 - Automatically monitor changes in the legal structure of our members by leveraging data from Dun and Bradstreet
- Ultimate goal is to ensure quality registry data
- Ensuring sanctions compliance remains one of our key focus areas



Software Engineering

Secure and resilient services

Objective



- Operate highly available, resilient and secure software services
 - Uptime critical services > 99.99%
 - Red Team testing main issues mitigated
 - Increase security and resiliency in RIPE NCC Access (SSO)
 - ISAE3000 control framework audit delivered

RIPE NCC Access modernisation



- We have been working on alternatives to address issues in our RIPE NCC Access (SSO), as reported in RIPE 84
 - Replacement of Atlassian Crowd as the third-party engine and ground-up re-write of home-grown layer built on top of it
- Product selection performed and cloud alternatives have been ruled-out
 - Preferred candidate decided to stop providing access in some countries within our service region due to sanctions, and risk of that happening to other providers increased
- We are now assessing an open-source solution (Keycloak)
- Timelines for the project have been shifted
 - Delivery now expected by end of Q1 2023

Red Team Testing



Red Team Testing (2)



- Red team was unable to gain access to our systems using conventional methods
- Report was delivered two weeks ago
 - Strong perimeter, good security awareness (e.g. issues reported to the security team), detected physical security breach
- Once in the assumed compromised scenario (laptop with access to our VPN), they were able to complete the assignment
- A list of vulnerabilities have been reported, and we will be working to close them over the next period
- Once vulnerabilities are closed we will disclose more details

Publish in Parent



- We developed a new functionality for RPKI, which allows users running their own Certificate Authority (Delegated RPKI) to publish their signed objects in RIPE NCC's repositories
- I would like to thank you all for the input provided in the mailing list concerning the specification of this service
- We will deploy the new functionality to our members and eligible resource holders over the next few weeks

Summary



- Security and resiliency are a top priority for our software services
- The modernisation of RIPE NCC Access is taking longer than expected due to the unsuitability of cloud solutions assessed
 - We expect the new solution to be more robust considering the geopolitical situation in our region
- A new service is being launched for RPKI (Publish in Parent) and we look forward to your feedback about it



Questions



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