Continued Operations for New gTLDs

21 November 2013

ICANN Global Domains Division

Christine Willet
VP, gTLD Operations

ICANN @15

ICANN 48 · 17-21 Nov 2013
Buenos Aires
ICANN

Agenda

+ Service Legal Agreement Monitoring System

+ Registry Reporting Interface

+ EBERO Program Update

Service Level Agreement Monitoring System

**Francisco Arias**
Director, Technical Services

Purpose

Core value of ICANN:

+ Preserving and enhancing the operational stability, reliability, security, and global interoperability of the Internet.

ICANN is proactively monitoring new gTLDs' critical functions

ICANN has the mechanism to restore the critical functions in case of an emergency

Critical Registry Functions
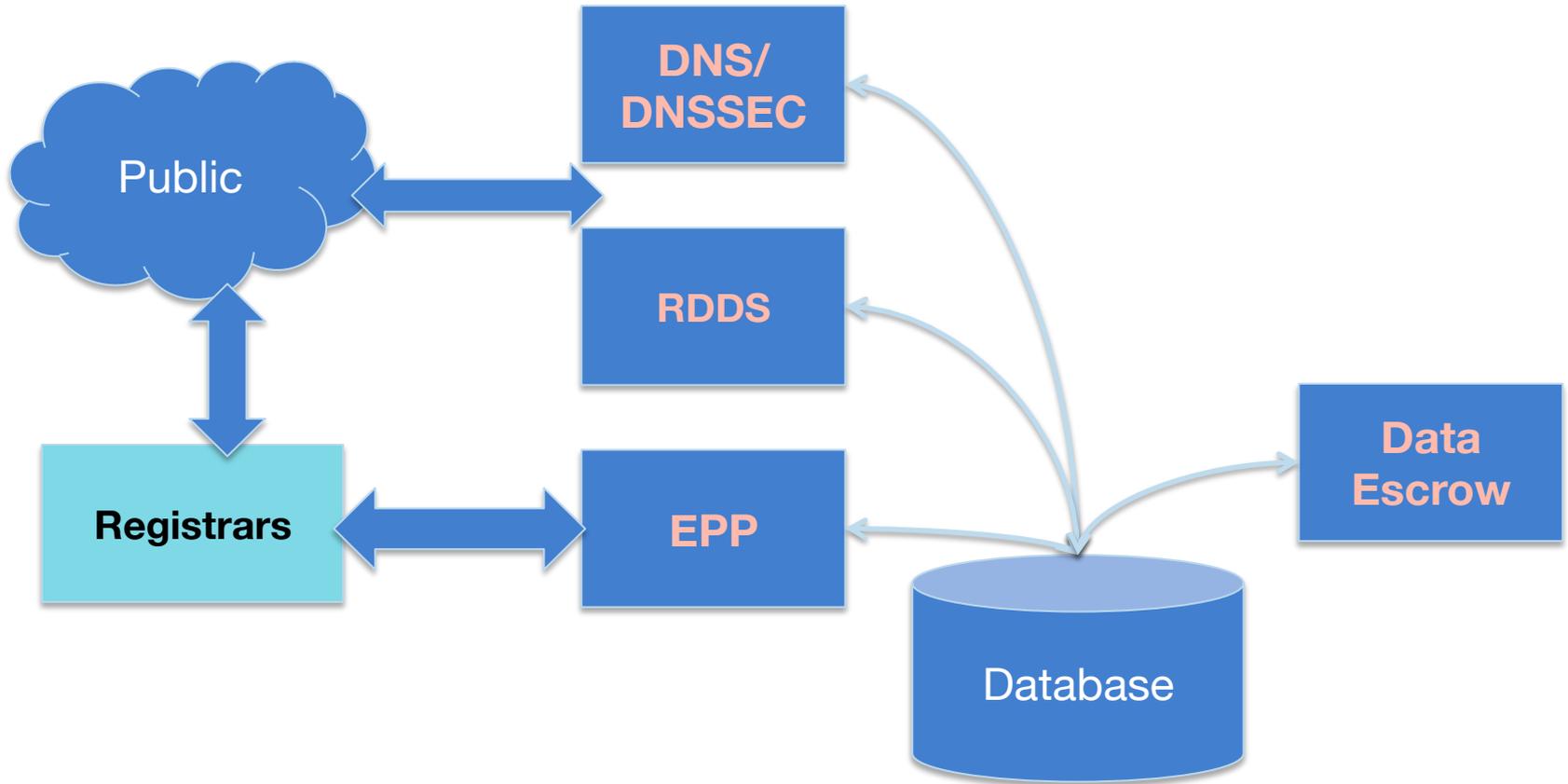
What is being monitored?

+ DNS is working

+ DNSSEC is working

+ The SRS (EPP interface) is working

+ Updates to the SRS are being propagated to DNS and RDDS

+ RDDS services (WHOIS and Web Whois) are working

SLA of new gTLDs:

|	Parameter	SLR (monthly basis)
DNS	DNS service availability	0 min downtime = 100% availability
	DNS name server availability	≤ 432 min of downtime (≈ 99%)
	TCP DNS resolution RTT	≤ 1500 ms, for at least 95% of the queries
	UDP DNS resolution RTT	≤ 500 ms, for at least 95% of the queries
	DNS update time	≤ 60 min, for at least 95% of the probes
RDDS	RDDS availability	≤ 864 min of downtime (≈ 98%)
	RDDS query RTT	≤ 2000 ms, for at least 95% of the queries
	RDDS update time	≤ 60 min, for at least 95% of the probes
EPP	EPP service availability	≤ 864 min of downtime (≈ 98%)
	EPP session-command RTT	≤ 4000 ms, for at least 90% of the commands
	EPP query-command RTT	≤ 2000 ms, for at least 90% of the commands
	EPP transform-command RTT	≤ 4000 ms, for at least 90% of the commands

Emergency threshold:

Emergency Thresholds

The following matrix presents the Emergency Thresholds that, if reached by any of the services mentioned above for a TLD, would cause the Emergency Transition of the Critical Functions as specified in Section 2.13. of this Agreement.

Critical Function	Emergency Threshold
DNS service (all servers)	4-hour downtime / week
DNSSEC proper resolution	4-hour downtime / week
EPP	24-hour downtime / week
RDDS (WHOIS/Web-based WHOIS)	24-hour downtime / week
Data Escrow	Breach of the Registry Agreement caused by missing escrow deposits as described in Specification 2, Part B, Section 6.

Components of the SLA Monitoring System

+ Several probe nodes must agree that the service is not working (test are done concurrently).

+ What is verified in a test (e.g. DNS query) may depend on the result of another test (e.g. domain name created/updated via EPP).

+ 40 probe nodes around the Internet/world

+ 2 central processing locations

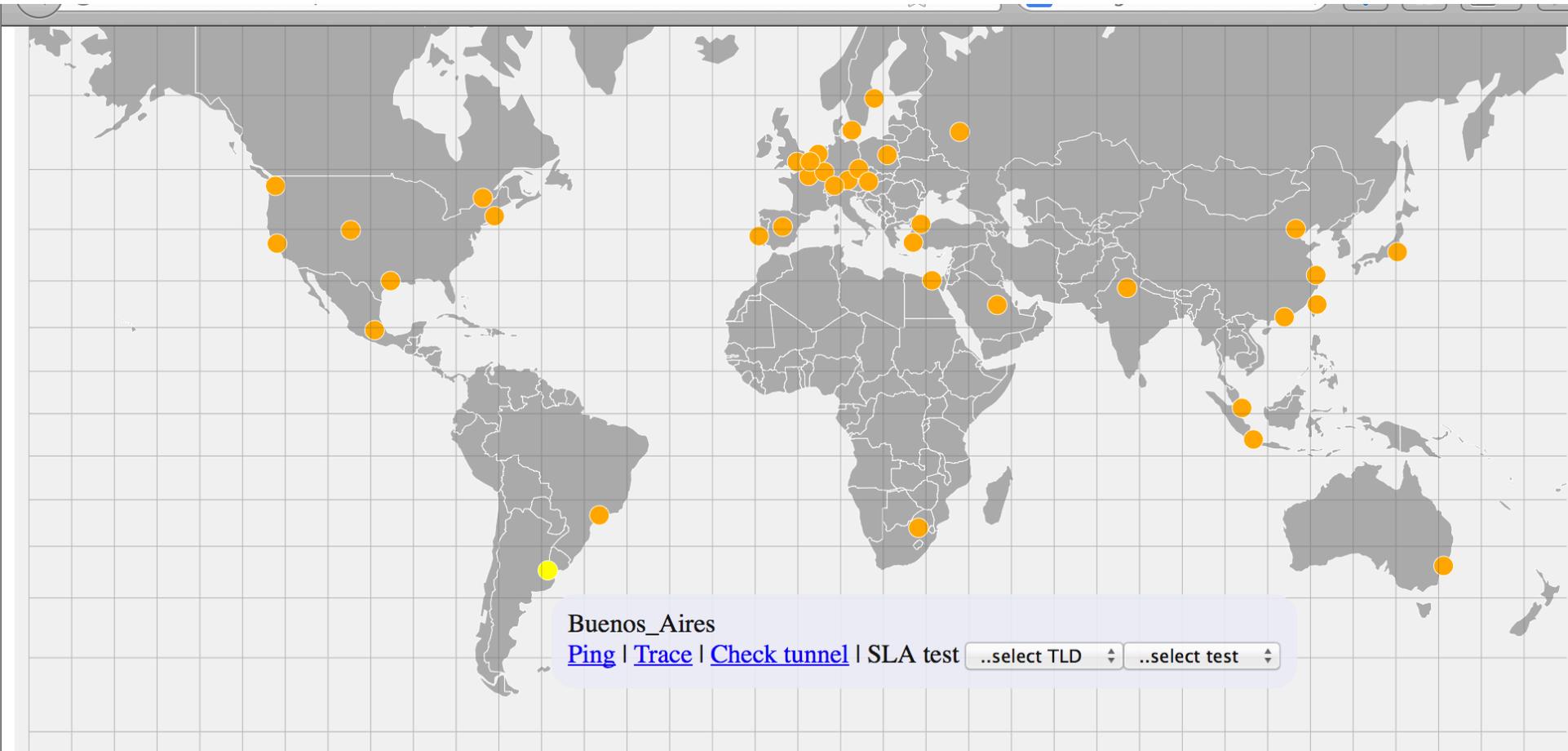# Central server and probe nodes
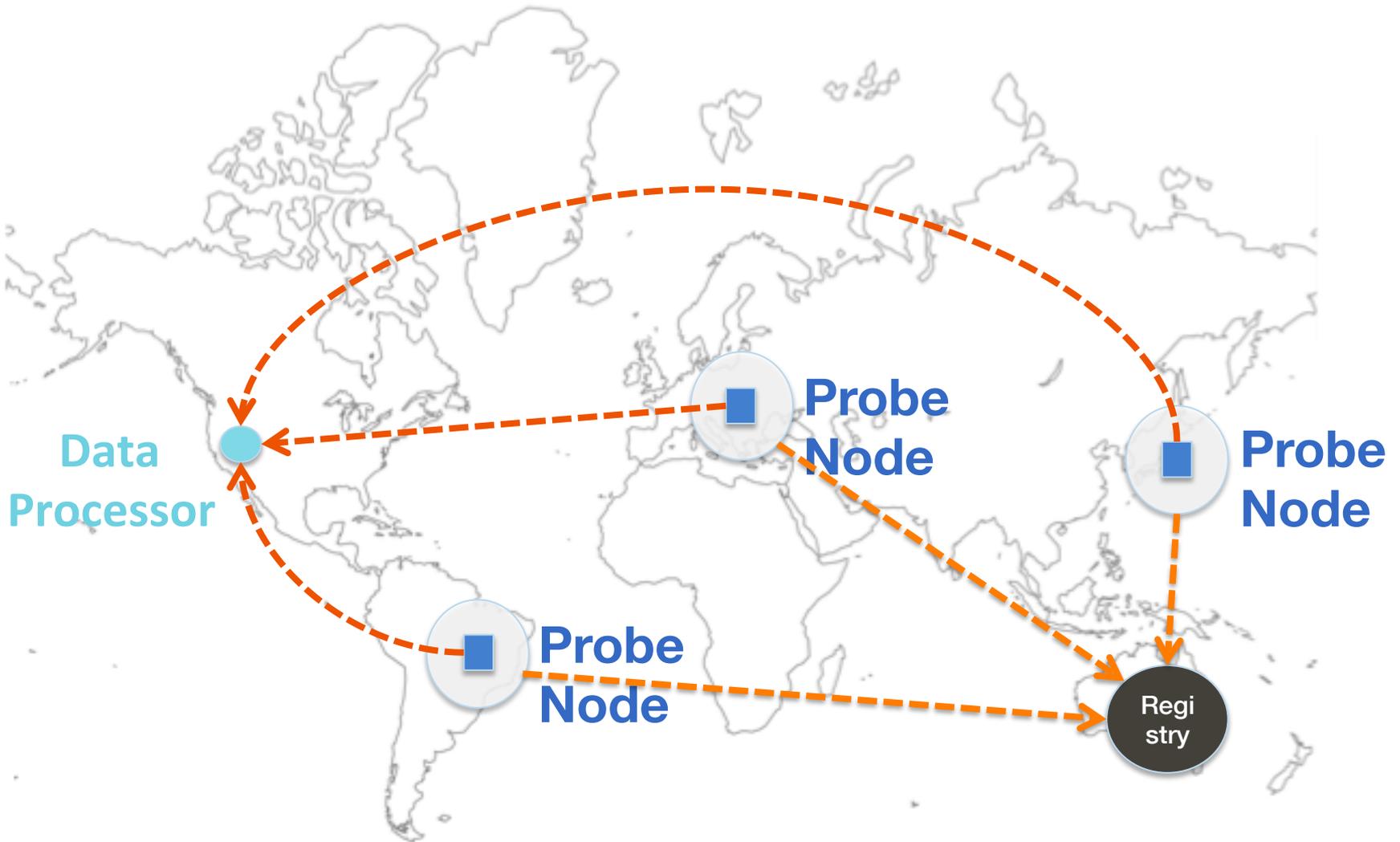
Where to place the probe nodes?

Probes for measuring DNS/WHOIS shall be placed as near as possible to the networks with the most users across the different geographic regions.
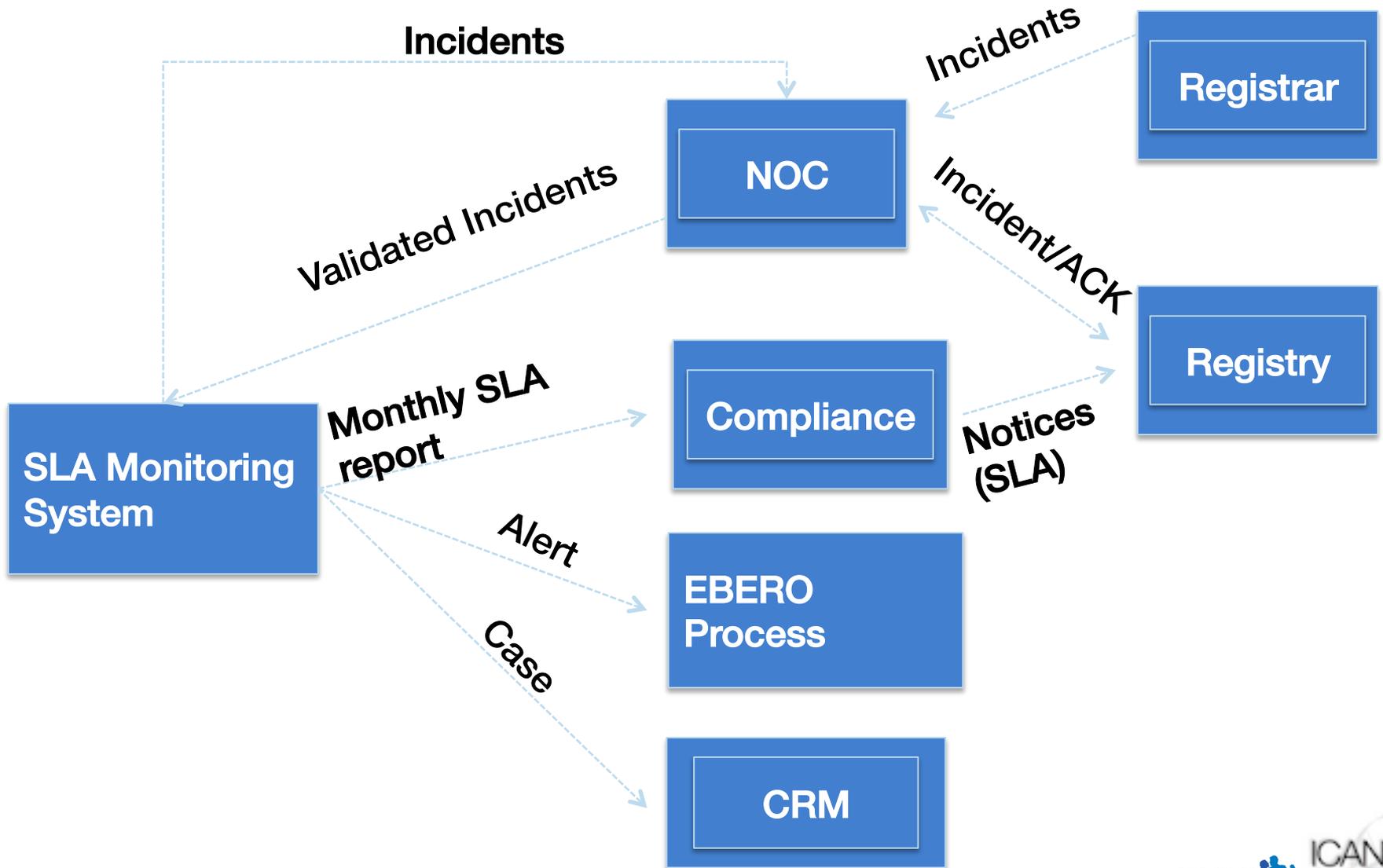
+ Countries where the eyeballs are located.

Probes for measuring EPP shall be placed close to Registrars points of access to the Internet across the different geographic regions.
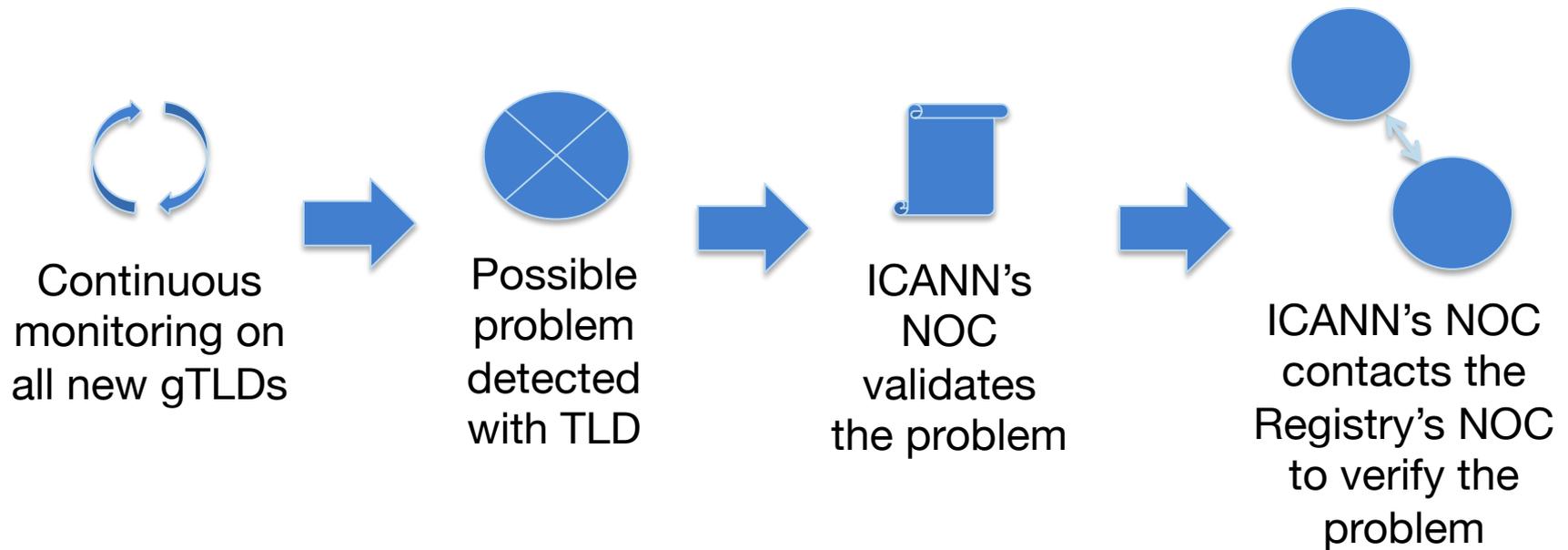
+ Countries where the registrars are located.

Where the probe nodes are

Buenos_Aires
Ping | Trace | Check tunnel | SLA test ..select TLD ..select test

SLA Monitoring System – High level interactions

Process workflow (incident):

Continuous monitoring on all new gTLDs → Possible problem detected with TLD → ICANN's NOC validates the problem → ICANN's NOC contacts the Registry's NOC to verify the problem

Process workflow (rolling week / emergency threshold):

System continuously calculates the % of emergency threshold as described in Specification 10

Thresholds are reached (5%, 10%, 20%, 50%, 75%, 90%, 100%)

Ticket is created/updated per service (DNS, DNSSEC, EPP, RDDS), when a new threshold is reached

Alert is sent to EBERO process
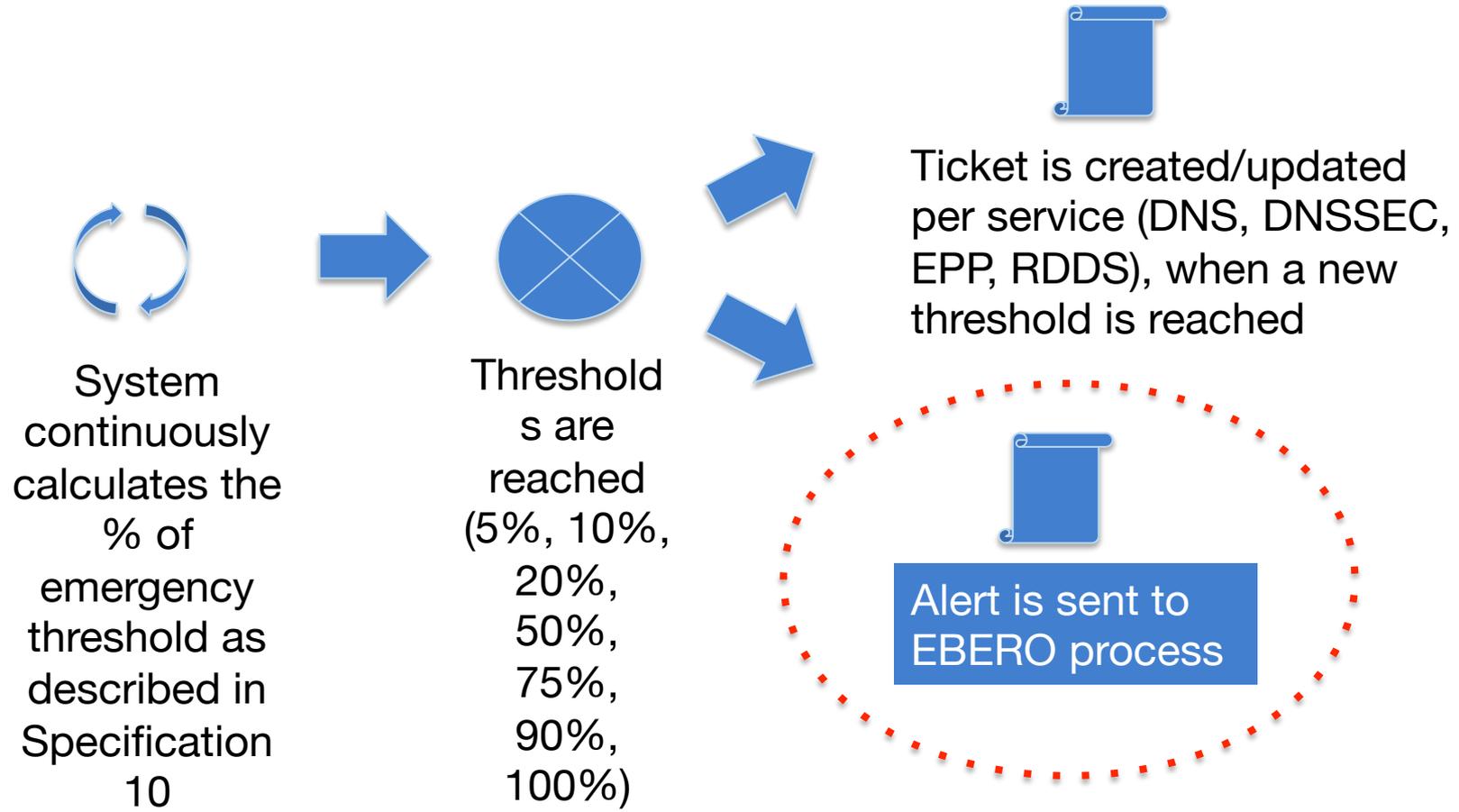
Process workflow (monthly SLA):

System continuously monitors all TLDs → Monthly SLA report is generated → Compliance Interface & Processes → Compliance sends notice to Registry

Alert is sent to EBERO process (if an exception is found)
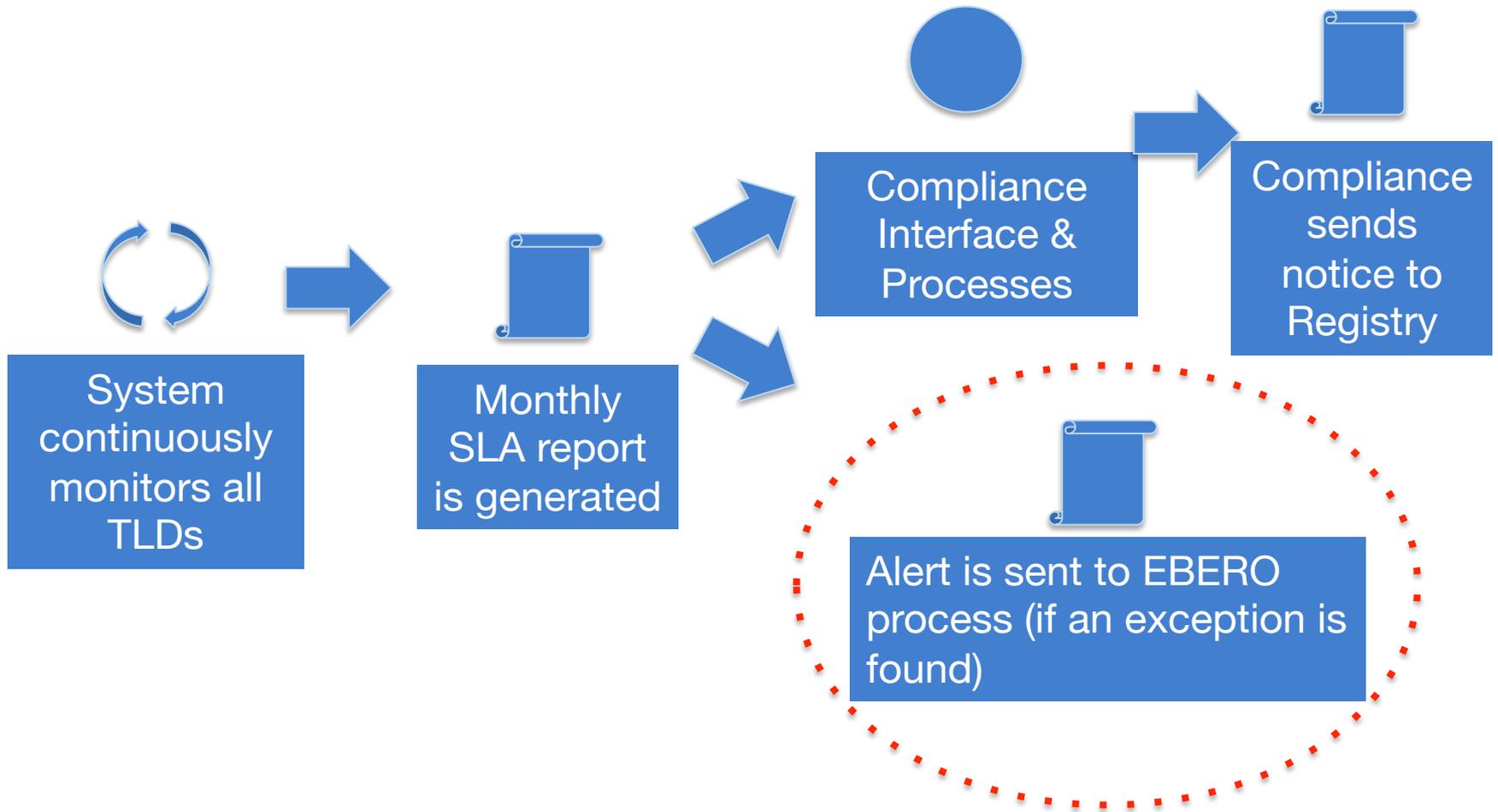
Operational Milestones

October 2013

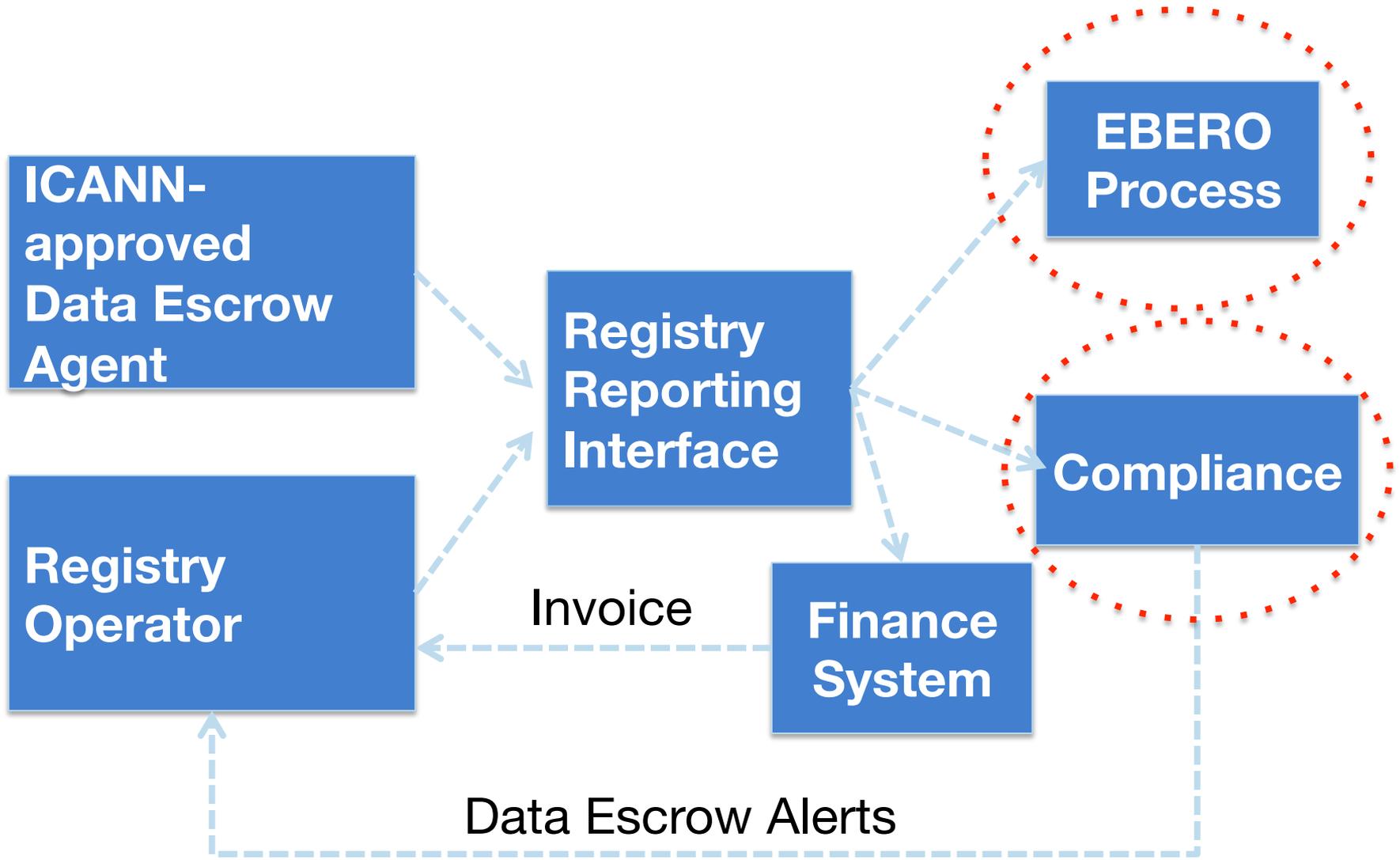+ DNS and Registration Data Directory Services testing

December 2013

+ ICANN NOC fully operational

+ Full Extensible Provisioning Protocol, Registration Data Directory Services, and DNS testing

Registry Reporting Interface

Francisco Arias
Director, Technical Services

Registry Reporting Interface

Registry Reporting Interface

+ Receives daily notifications from Data Escrow Agents

+ Receives daily reports from Registry Operator

+ Receives of registry monthly reports

+ Provides input for the finance system to automate registry and registrar billing

Registry Reporting Interface

Data Escrow Notifications:

+ A Data Escrow Agent sends a daily notification to ICANN about:

+ Invalid deposit

+ Valid deposit

+ Missing deposit for the date

Data Escrow - Registry Reporting Interface (RRI)
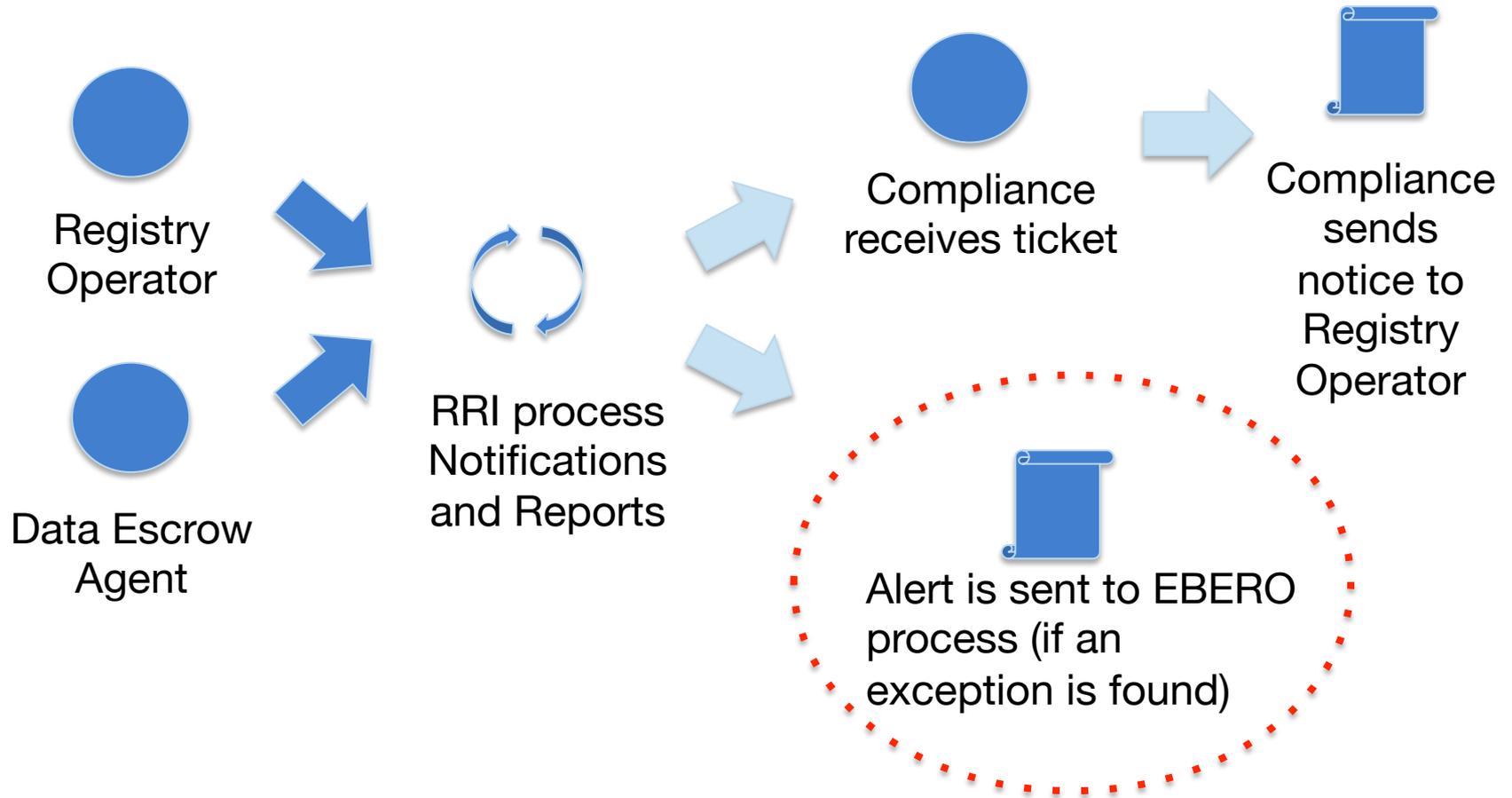
Data Escrow Notifications:

- The RRI platform also provides exception-based alerts to Compliance for the following criteria.
  - Registry missing daily or full deposit, registry failing data escrow agent's verification test, escrow agent failing to send daily notifications to ICANN

- Notifications to and enforcement of registry operator's obligations are based on contractual obligations and will follow compliance process.
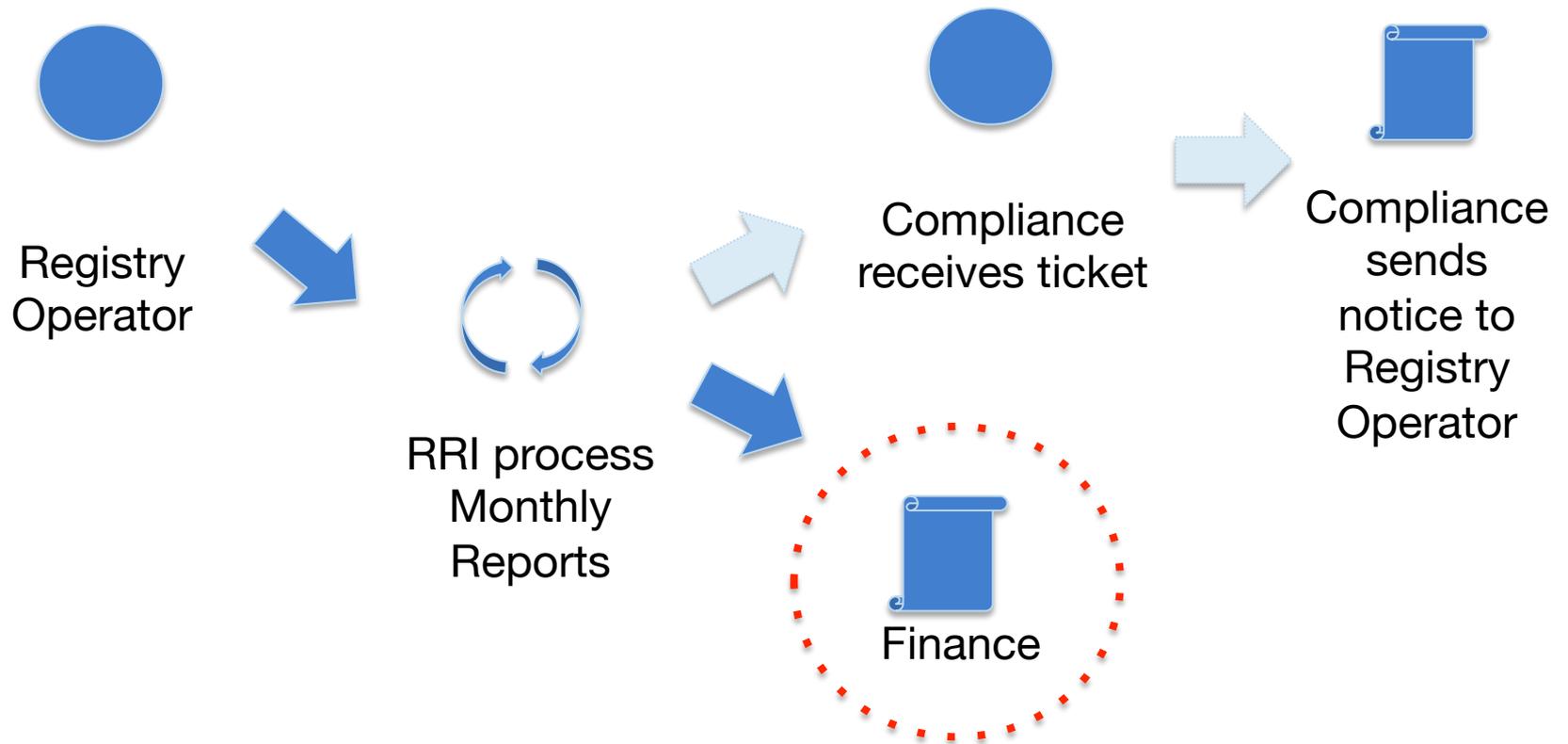
Registry Submitted Monthly Reports

+ The RRI platform validates monthly reports from Registry Operators.

+ The RRI platform also provides exception-based notifications to Compliance for the following criteria.

  – Registry missing monthly report as defined in the Registry Agreement

+ The RRI platform create the necessary input for invoicing registries and registrars.

Data Escrow Process Workflow

Registry Operator

Data Escrow Agent

RRI process Notifications and Reports

Compliance receives ticket

Compliance sends notice to Registry Operator

Alert is sent to EBERO process (if an exception is found)

Monthly Reports Process Workflow

Registry Operator → RRI process Monthly Reports → Compliance receives ticket → Compliance sends notice to Registry Operator

Finance

Operational Milestones

+ API specification:
  http://tools.ietf.org/html/draft-lozano-icann-registry-interfaces
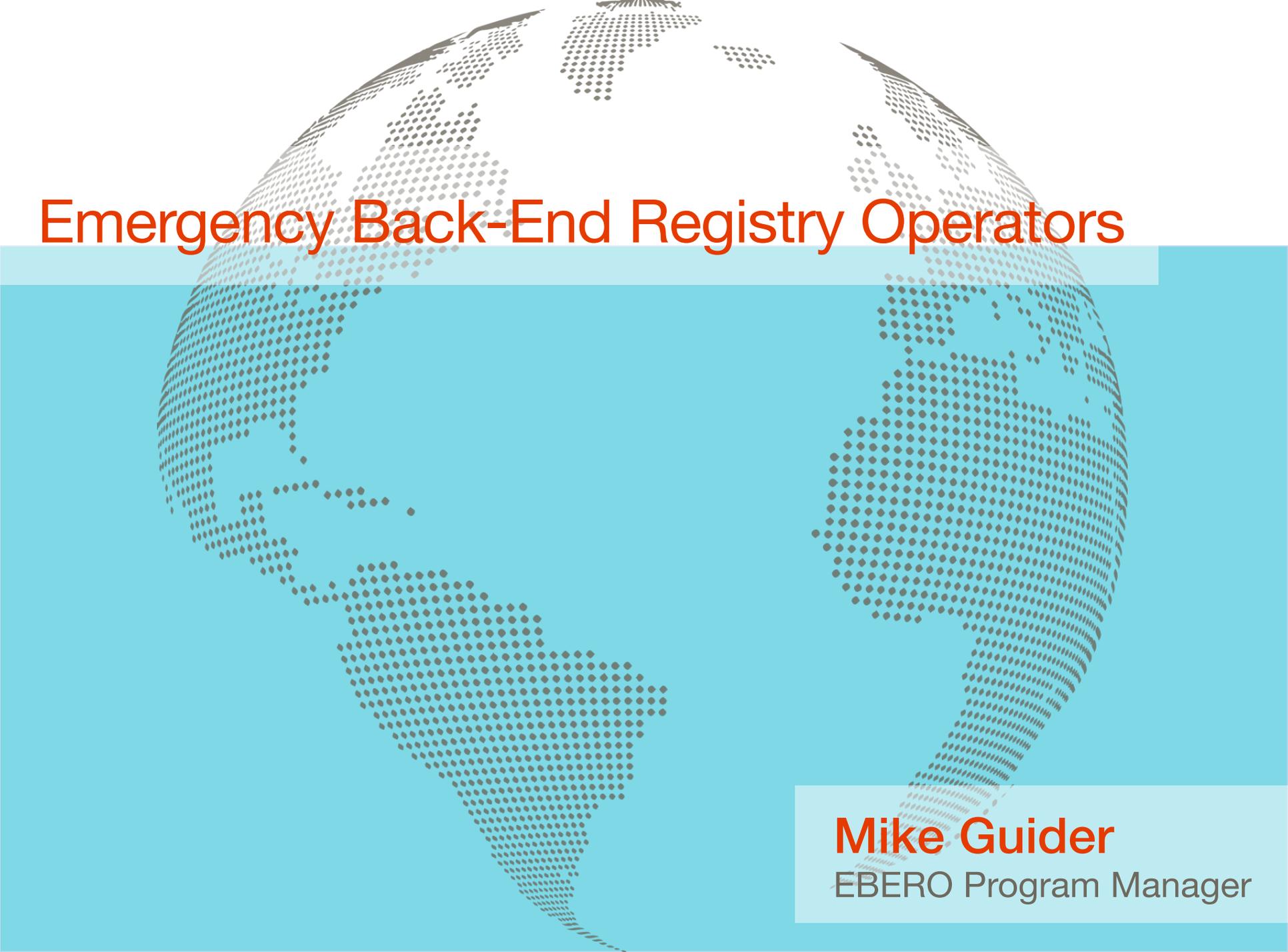
+ OT&E is available to Data Escrow Agents and Registry Operators since August.

+ Production environment is available since last week

+ First two Monthly report received on Tuesday

Emergency Back-End Registry Operators

Mike Guider
EBERO Program Manager

Topics

+ EBERO Mission

+ Launching the EBERO Service

+ Inspecting for Readiness

+ What it is like to have a TLD in EBERO

+ EBERO Master Service Agreement

+ Common Transition Process

+ Customer Service

EBERO Service Mission

The EBERO Program's mission is to protect registrants from situations in which a registry operator is unable or unwilling to perform its obligations specified in Article 2.13, Article 4.5, or Specification 8 of the Registry Agreement.

Current Status

14 Respondents to the September 2011 RFI

+ 2 inspected and ready <u>now</u>

– CNNIC

– CORE

+ 2 in Contracting

– Neustar

– Nominet

Launching the EBERO Service

Readiness Inspection

+ Approve readiness for all EBEROs for CTP(Common Transition Process) "stand-by" service. CORE approved 24-Oct-2013 and CNNIC approved 5-Nov-2013.

Event Exercise

+ Conduct Event Exercise with each EBERO to simulate/practice an Event transfer-in. Planned for Q1 2014.

Inspecting Readiness

On-site 2-day Inspection

Requires CTP SLAs and processes

3 "Timed" Tests using CTP SLAs:

+ retrieval of zone file from ICANN

+ retrieval of escrow data from ICANN

+ deposit escrow data to Iron Mountain

Event Exercise

+ EBERO will execute a Full "timed" Event Transfer-in simulation/practice

+ ICANN will simulate/practice Event Level Alerts

+ Includes EBERO, Escrow Agent, and ICANN but not root zone partners

+ Uses an Event script and simulated data

ICANN 48 · 17-21 Nov 2013
Buenos Aires
ICANN @15

What is it like to have a TLD in EBERO?

Normal Registry	EBERO
Registry provides DNS, DNSSEC, SRS, RDDS and makes data escrow deposits (five critical functions).	EBERO provides DNS, DNSSEC, SRS, RDDS and makes data escrow deposits (five critical functions).
Registry adds, removes, expires, renews domain name registrations.	EBERO does not add, remove, expire or renew domain name registrations.
Registry may offer other approved services (from RA or via RSTEP).	EBERO does not provide the other approved services from registry.

What is it like to have a TLD in EBERO?

Normal Registry	EBERO
Billable events can occur: registry manages monetary transactions between registrar and registry.	No billable events occur: no monetary transactions between a registrar and EBERO.
Pays fees to ICANN on a per-DUM (domain under management) basis.	Does not pay fees to ICANN for domain names in EBERO registries.

What is it like to have a TLD in EBERO?

Normal Registry	EBERO
Timing and performance of DNS, DNSSEC, RDDS, and SRS governed by Specification 10 of the Registry Agreement.	No change.
Timing and performance of Data Escrow deposits governed by Specification 2 of the Registry Agreement.	No change.

EBERO Master Service Agreement (MSA)

+ Terms and Conditions are generally the same for all EBEROs

+ Common Transition Model and Fees are identical for all EBEROS

+ Fees are generally aligned with Supplemental Note 1.9 to the Applicant Guidebook

+ Term 5 years for all EBEROS

MSAs are posted on the New gTLD website.

Common Transition Process
> Event Leadership

EBERO Executive Committee

+ Vice President, gTLD Operations

+ President, Global Domains Division

+ ICANN General Counsel

Event Directors

+ Director, EBERO Program

+ Chief Security, Stability and Resiliency Officer

+ Open (Senior EBERO Technical Advisor)

Common Transition Process
> Event Alert Level Model

| Event Alert Level	Action	Description
EAL 0	Monitor	No (known) conditions that pose any heightened or unusual risk.
EAL 1	Watch	"Substantial risk and credible threat of registry failure within <u>60 days</u>"
EAL 2	Warning	"Substantial risk and credible threat of registry failure within <u>10 days</u>"
EAL 3	Critical	"Substantial risk and credible threat of registry failure within <u>48 hours</u>"
EVENT	**Execute Transition**	**Emergency transition has been ordered to protect registrants.**

Common Transition Process
> Transition-in EBERO SLAs

Transition Objective	Service Level
DNS/DNSSEC service restored (root zone updated)	8 hours from event declaration
Data Escrow released from escrow agent	24 hours from event declaration order
SRS service ready	72 hours from escrow being released to EBERO
RDDS service ready	24 hours from SRS being operational
Data Escrow deposits	24 hours from SRS being operational

150 hours to Transfer-in all 5 Critical Functions

Transition-in Timeline
> Difficult Transition
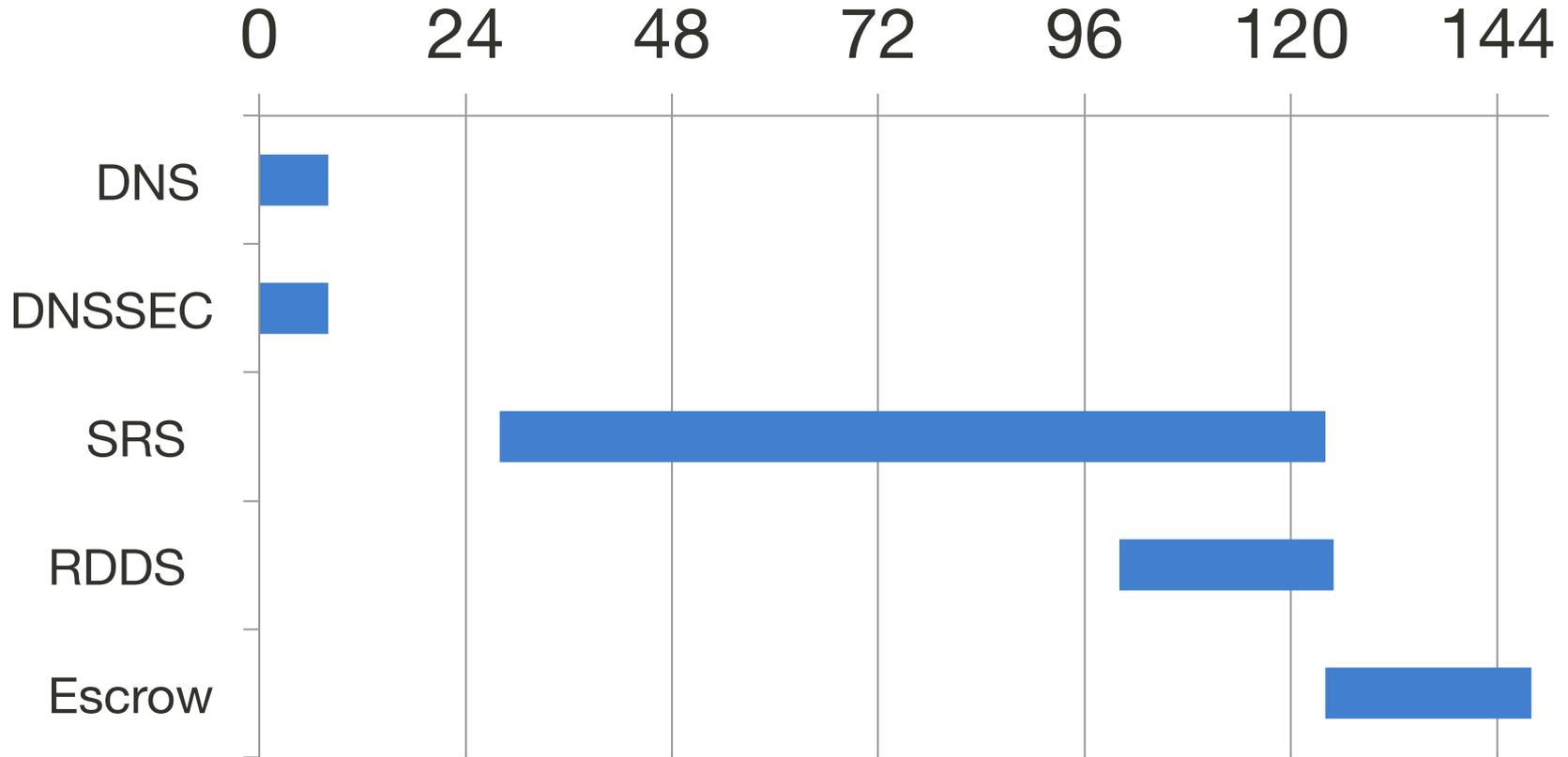
Minimal issues results in DNS up a few hours and all 5 functions operational within a day.

Customer Service Roles

Registrars

+ Provide support to Registrants. Examples include normal user inquires as well as changing name servers, DNSSEC parameters, and contacts normally via EPP.

EBERO

+ Direct support to Registrars to ensure that EPP functionality is available.

ICANN

+ Provides support to resolve discrepancies in registry data and act on applicable court orders.

ICANN 48 · 17-21 Nov 2013
Buenos Aires
ICANN @ 15

Questions?