

# DNSSEC Deployment Metrics Research

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# The Goal

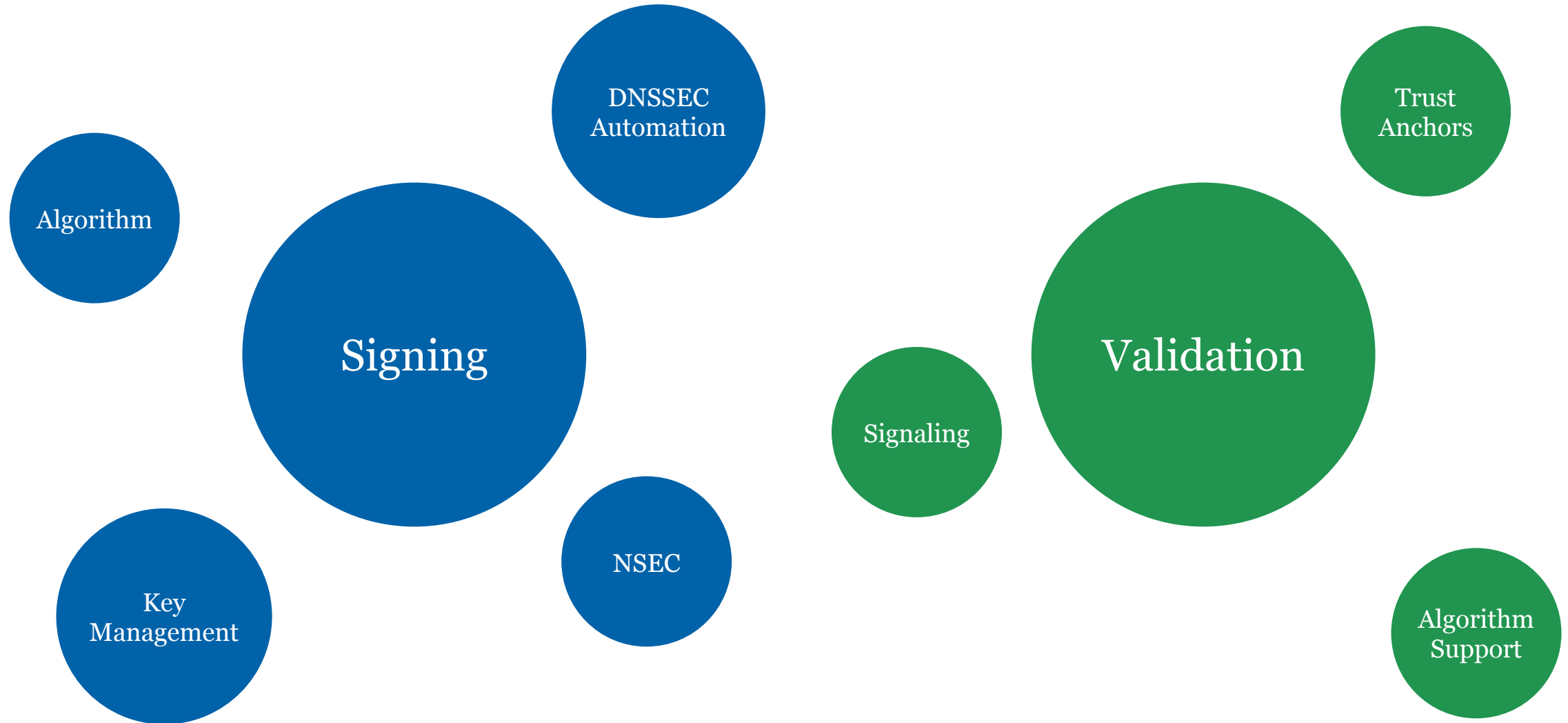
- to perform a survey of academic and industry literature related to the deployment of DNSSEC
- to find and document the different techniques and metrics used *to measure all aspects* of DNSSEC deployment
- to make recommendations to ICANN org for which metrics to measure *to obtain the most comprehensive view* of DNSSEC deployment across the Internet [1]

[1] <https://www.icann.org/en/system/files/files/rfp-dnssec-deployment-metrics-research-17may21-en.pdf>

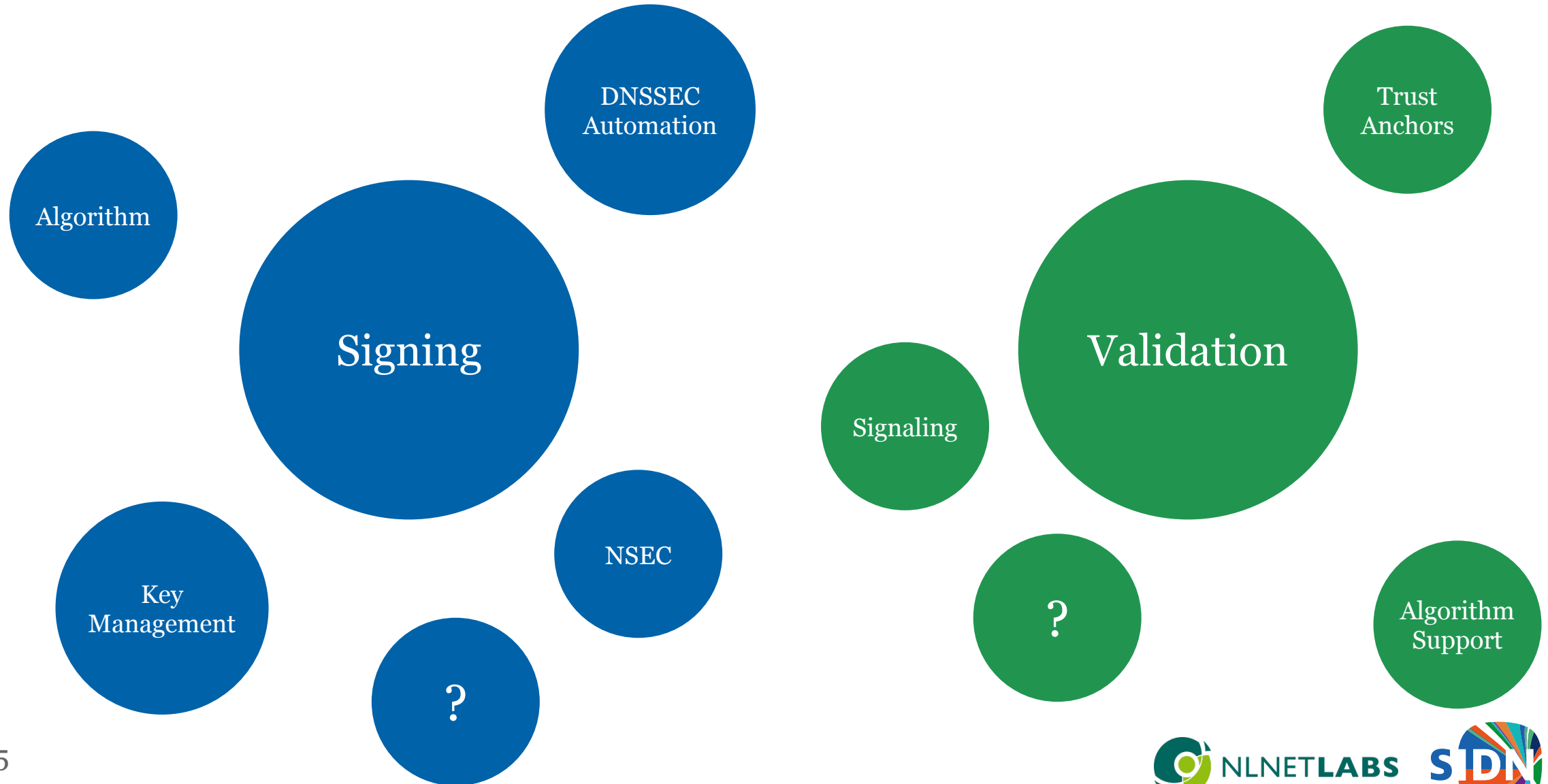
# 1. Challenge: DNSSEC deployment is a wide field



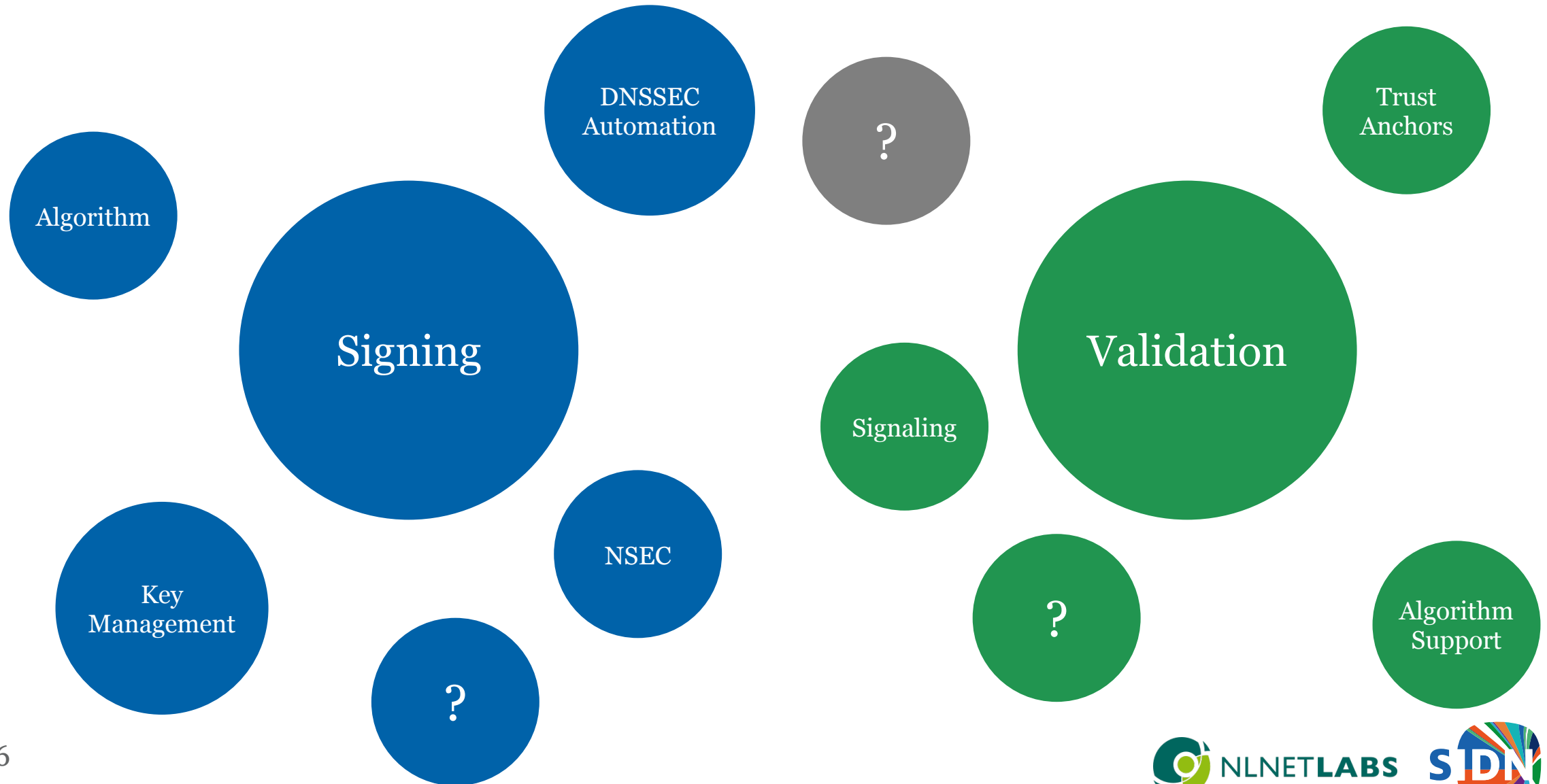
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## 2. Challenge: One metric, different measurement techniques

Passive		<i>vs</i>		Active
End user	<i>vs</i>	Recursive Resolver	<i>vs</i>	Authoritative Name Server
Measurement platform		<i>vs</i>		“Hack”
Raw		<i>vs</i>		Aggregated
Full control		<i>vs</i>		Reliant on third party
Transparent		<i>vs</i>		Opaque

# Our Approach

1. Study a broad range of research
  - from academia
  - presented at conferences by the industry (RIPE, ICANN DNSSEC workshop, ...)
2. Gap analysis with identified metrics
3. Develop assessment framework to assess measurement techniques



# Technique Assessment

- Measurement technique has large impact on each metric
- Assess each technique based on:
  - **Coverage** – which parts of the ecosystem can be measured theoretically and with what bias?
  - **Reproducibility** – are all measurement parameters known and is the setup transparent?
  - **Feasibility** – does the technique rely on 3<sup>rd</sup> parties e.g., data or access to vantage points?

# Identified metrics (WIP)

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- Telemetry
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- Registrar/registry/DNS operator, Client, DNS Software metrics

# Measurements in the interest of the community

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*Thank you*