

# NAPTR Record Manipulation



# Introduction

- Designing and implementing a mechanism to manipulate NAPTR records requires good understanding about the environment in which NAPTR lives
- NAPTR Records are not lonely entities, they depend on and interact with external entities
- The goal is to create a business model for ENUM and not build another DNS editing tool



# NAPTR Record Environment

9.9.2.5.0.0.8.0.2.1.3.e164.arpa. 0 IN NAPTR 0 0 "U" "E2U+SIP" "!^.\*\$!sip:ag@ag-projects.com!" .



# NAPTR Record Environment

Organizations, Providers, Subscribers (People)

```
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Protocols, Networks, Machines



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Organizations, Providers, Subscribers (People)

OPTA ITU RIPE SIDN

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IN

WHOIS

Protocols, Networks, Machines



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SS7

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Organizations, Providers, Subscribers (People)

OPTA ITU RIPE SIDN

9.9.2.5.0.0.8.0.2.1.3e164.arpa. 0 IN NAPTR 0 0 "U" "E2U+SIP" "!^.\*\$!sip:ag@ag-projects.com!" .

Q931

SS7

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WHOIS

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# NAPTR Record Environment

Organizations, Providers, Subscribers (People)

Subscriber OPTA ITU RIPE SIDN

9.9.2.5.0.0.8.0.2.1.3+e164 arpa 0 IN NAPTR 0 0 "U" "E2U+SIP" "!^.\*\$!sip:ag@ag-projects.com!" .

+31-20-8005299

Q931

SS7

IN

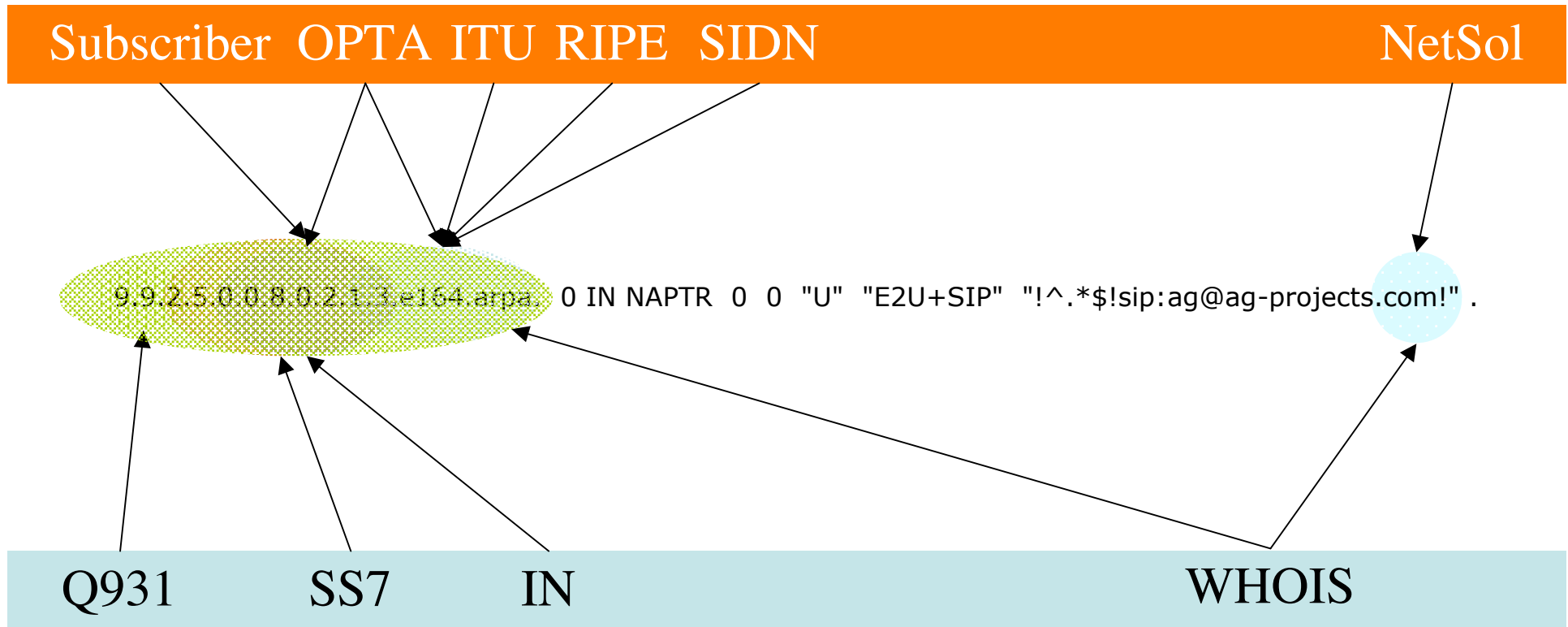
WHOIS

Protocols, Networks, Machines



# NAPTR Record Environment

Organizations, Providers, Subscribers (People)

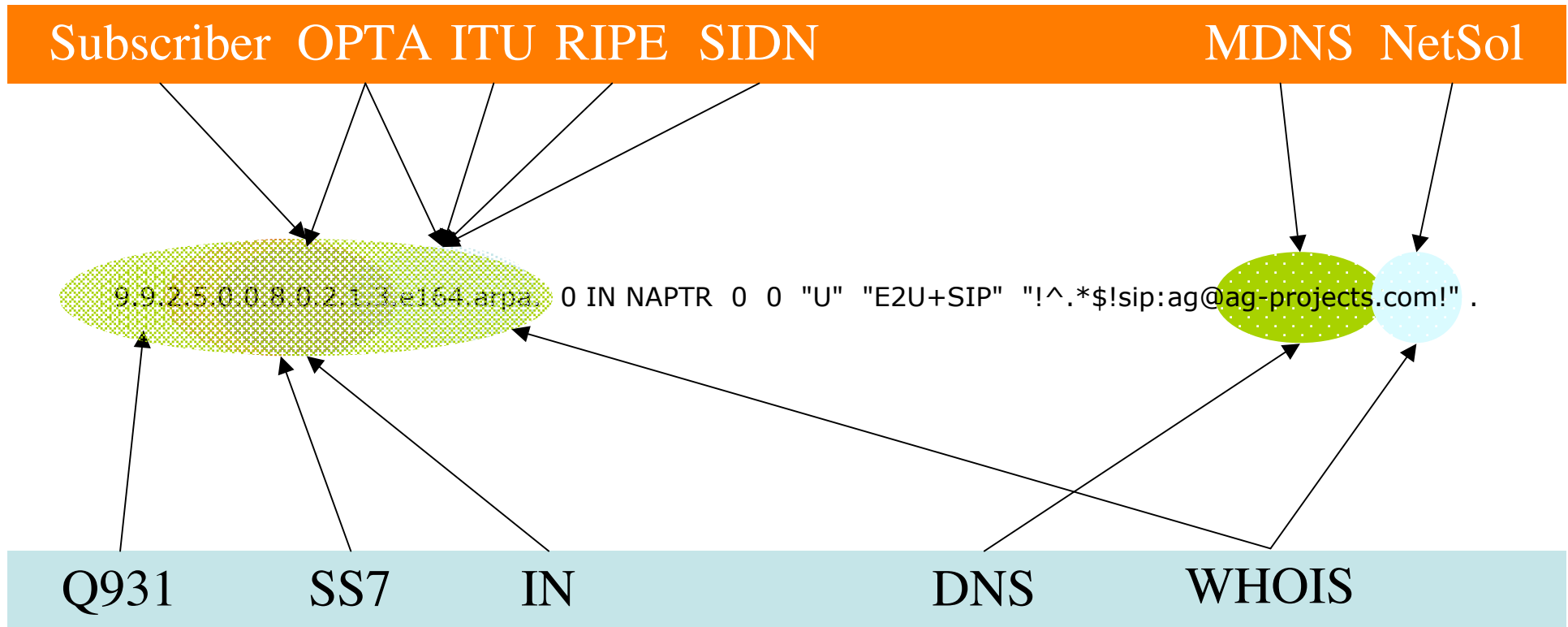


Protocols, Networks, Machines



# NAPTR Record Environment

Organizations, Providers, Subscribers (People)

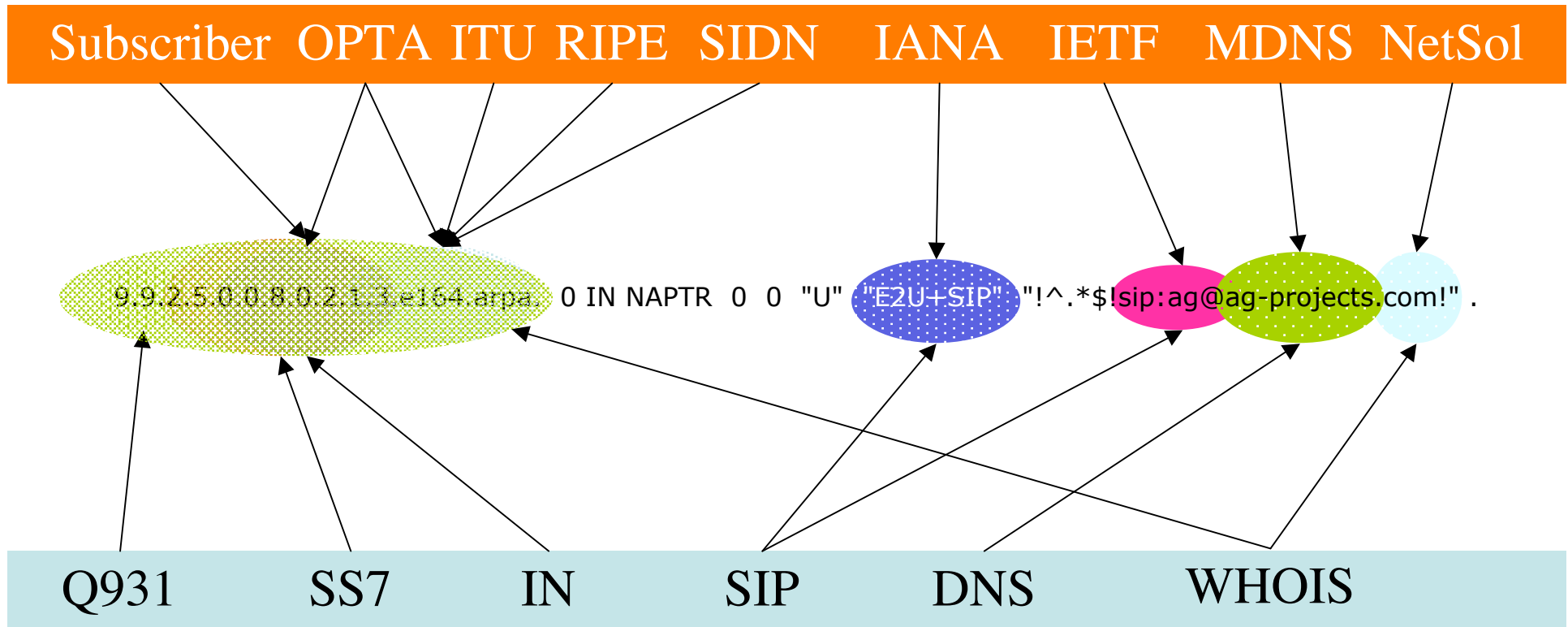


Protocols, Networks, Machines



# NAPTR Record Environment

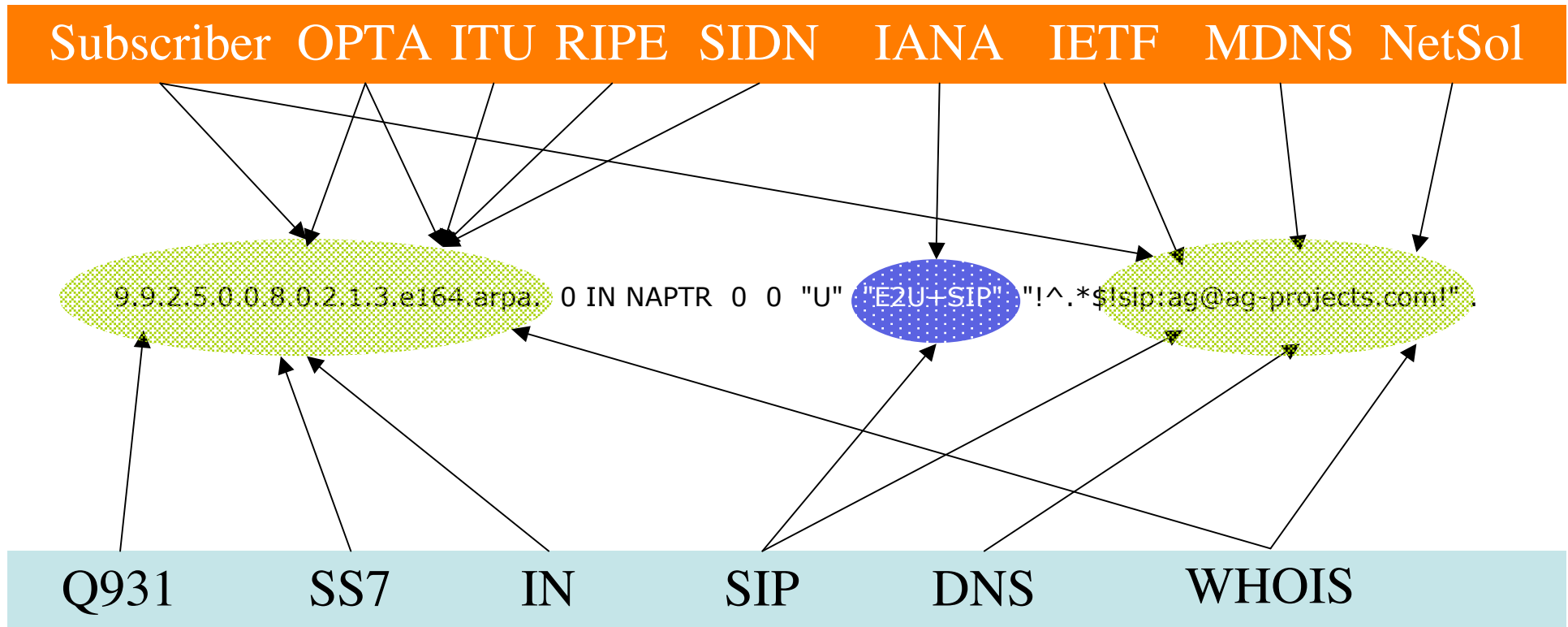
Organizations, Providers, Subscribers (People)



Standards and Protocols (Machines)

# NAPTR Record Environment

Organizations, Providers, Subscribers (People)

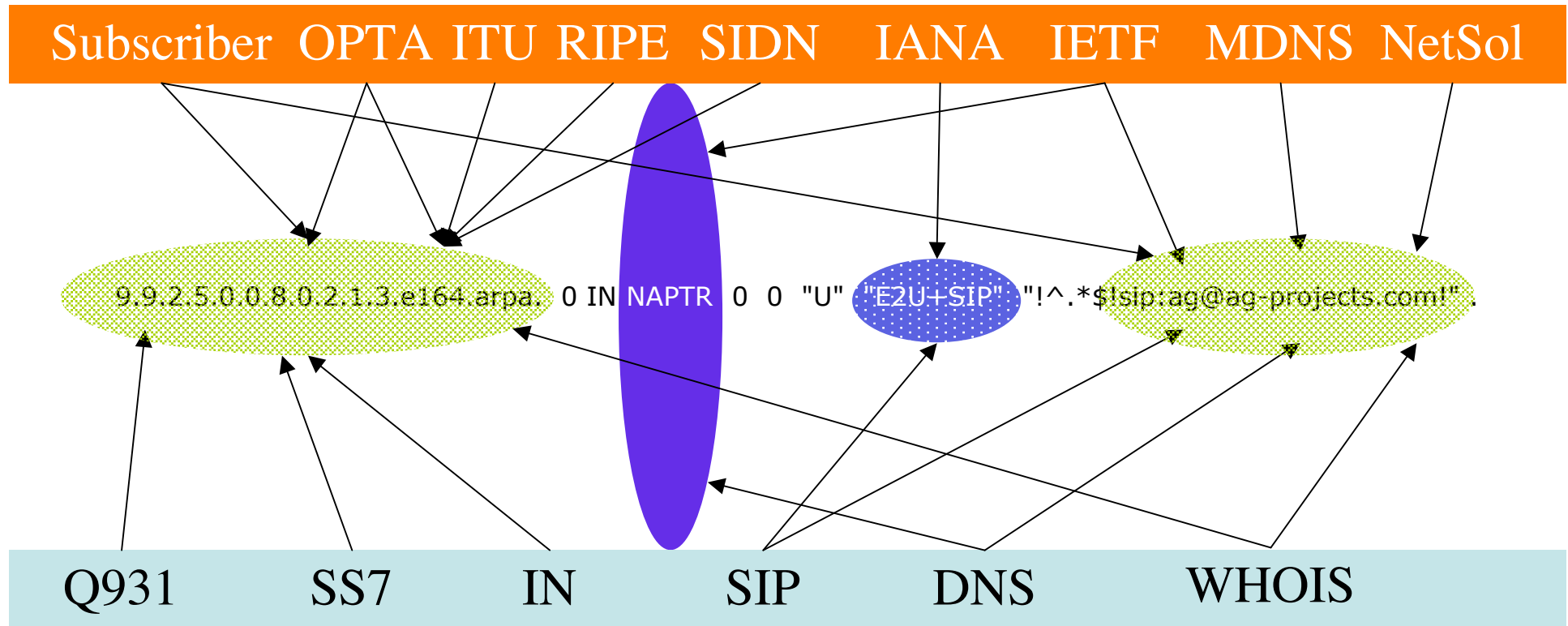


Protocols, Networks, Machines



# NAPTR Record Environment

Organizations, Providers, Subscribers (People)



Protocols, Networks, Machines



# NAPTR Record Environment

Organizations, Providers, Subscribers (People)

Subscriber OPTA ITU RIPE SIDN IANA IETF MDNS NetSol

9.9.2.5.0.0.8.0.2.1.3.e164.arpa. 0 IN NAPTR 0 0 "U" "E2U+SIP" "!^.\*\$!sip:ag@ag-projects.com!".

Q931

SS7

IN

SIP

DNS

WHOIS

Protocols, Networks, Machines



# NAPTR Record Environment

Organizations, Providers, Subscribers (People)

Subscriber OPTA ITU RIPE SIDN IANA IETF MDNS NetSol

+31-20-8005299

+31-23-5458104

NAPTR

sip:ag@ag-projects.com

Convergence

Q931

SS7

IN

SIP

DNS

WHOIS

Protocols, Networks, Machines





# NAPTR Record Manipulation

- In the context of ENUM, NAPTR records must evolve from simple DNS records into **manageable entities** that interact in a logical way with people and machines
- The software that manipulates NAPTR records should contain triggers and have mechanisms to exchange data with the NAPTR Environment
- Separate interface and functionality for ENUM Providers and ENUM Subscribers



# NAPTR Record Manipulation

- ENUM Provider perspective
- ENUM Subscriber perspective
- ENUM Developer task list



# ENUM Provider perspective

- Access to all NAPTR fields (advanced mode)
- Access from Helpdesk with multiple operators
- Changes should be performed real time
- Syntax checks based on RFCs must be combined with logic checks
- Changes of NAPTR records with version control
- Changes can be rolled-back at a later time
- ENUM numbers should not be mapped to meaningful names. Aliases should be used



# ENUM Subscriber perspective

- User friendly interface for subscribers to reach their goal (number portability, plug and play communication)
- Record changes committed in real time and not committed in batches
- Version control and roll-back based on Provider policy or legal constraints
- Subscriber awareness of the privacy issues related to populating DNS with contact details
- Subscribers should not be able to add/remove themselves from ENUM (validation process)



# ENUM Developer task list

- Provision IN platforms
- Provision DNS zones
- Manipulate NAPTR records
- Provision VoIP accounts
- Provision Billing systems
- Generate usage information
- Domain Registration
- Logging, version control, roll-back
- Validation



# Thank you!

This presentation is available at:

<http://ag-projects.com/NAPTR/>

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