

ENUM Activities in Japan

ENUM/SIP BoF in APRICOT

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Hiro HOTTA <hotta@jprs.co.jp>

ENUM Study Group

- **Established** <http://www.nic.ad.jp/en/enum/index.html>
 - September 2002
- **Objectives**
 - Understanding the ENUM technology : desk work
 - Studying the implementation and operation of the ENUM-based system, and related matters
 - Finding political/regulatory issues related to ENUM-based implementation and operation
 - Finding technological issues related to ENUM
 - Clarifying pros and cons in ENUM usage
- **Final report**
 - Published in May 2003
<http://www.nic.ad.jp/en/enum/ENUMReport.pdf>

ENUM Trial Japan (ETJP)



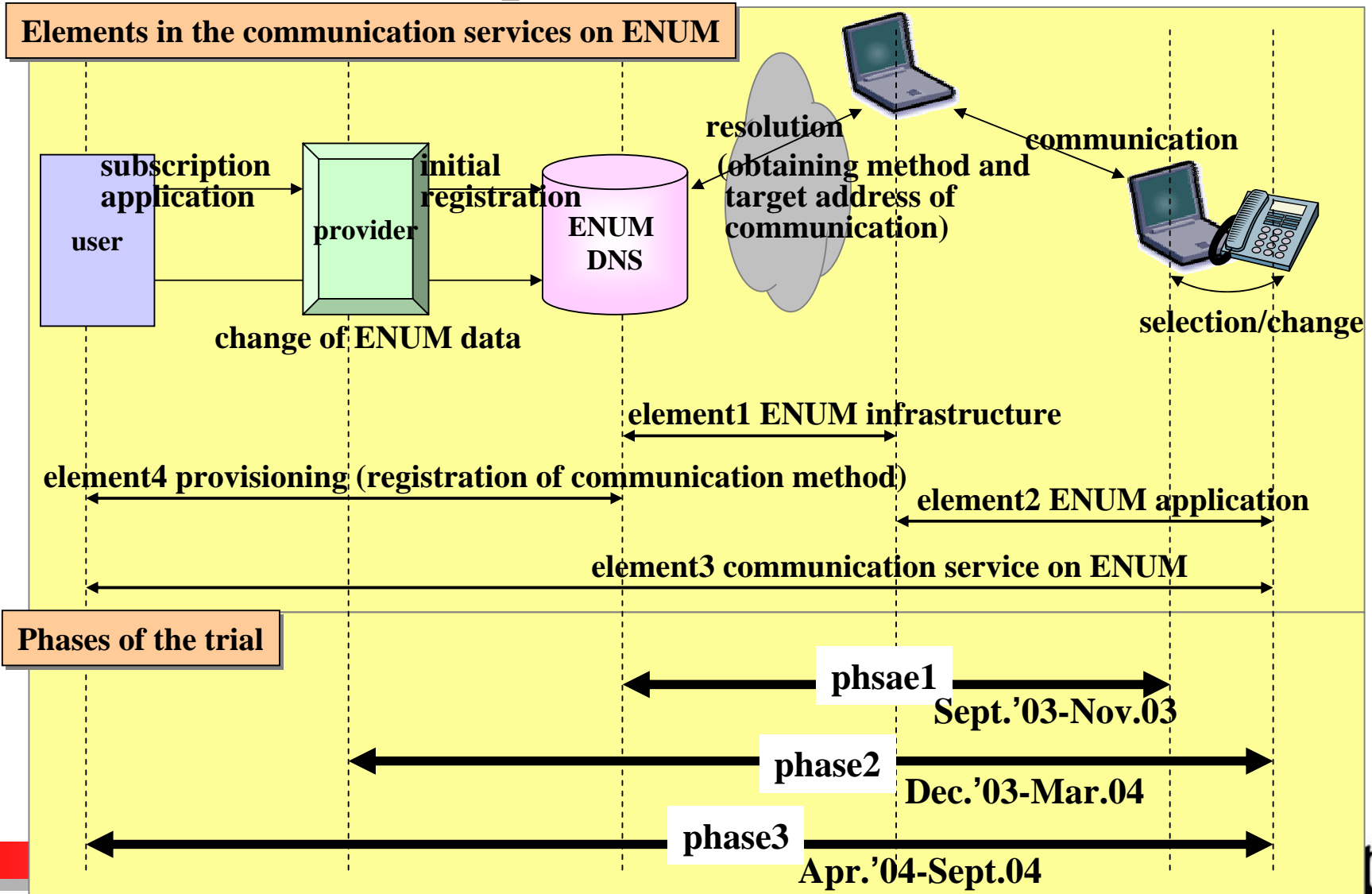
<http://etjp.jp/english/index.html>

- **Established**
 - on 17 September 2003 (1 year activity)
- **Purpose**
 - Perform ENUM trials to ensure functioning and feasibility of basic technical facility
 - Demonstration of technology for international use
 - Accumulation and sharing of know-how about ENUM
 - DNS operation for ENUM Trial
 - Feasibility test of communication applications (device, software) using ENUM
 - Feasibility test of communication services
- **Results**
 - Technical verification
 - Communication devices and software provided by participants
 - Communication services
 - Clarification and consideration of relevant issues

ETJP organization

- **Participants**
 - **Companies, organizations, and individuals who hope to contribute to ETJP activities**
 - **Number of members: 43 (as of February 20, 2004)**
- **Officers**
 - **Chairman**
 - **Shigeki Goto**
Japan Network Information Center (JPNIC)/Waseda University
 - **Vice chairman**
 - **Hirofumi Hotta**
Japan Registry Service Co., Ltd. (JPRS)
 - **Yoshiki Ishida**
WIDE Project

ETJP phases and schedule



ETJP Working Groups

- **Privacy and Security WG**
 - **Objective**
 - **Discuss data treatment policy in each phase of trial and then publish guidelines**
 - **Milestone**
 - **Jan 2004: First draft, request for comments**
 - **Feb 2004: Second draft**
 - **Mar 2004: Publish guideline**
- **DNS WG**
 - **Objective**
 - **Definition of possible ENUM DNS models in Japan, their requirements and evaluation criteria, then evaluate current DNS implementations**
 - **Milestone**
 - **Feb 2004: Definition of possible ENUM DNS models, requirements, evaluation criteria**
 - **Mar 2004: Build Testbed, evaluation**
 - **Apr 2004: publish reports of the evaluation**

DNS structure design

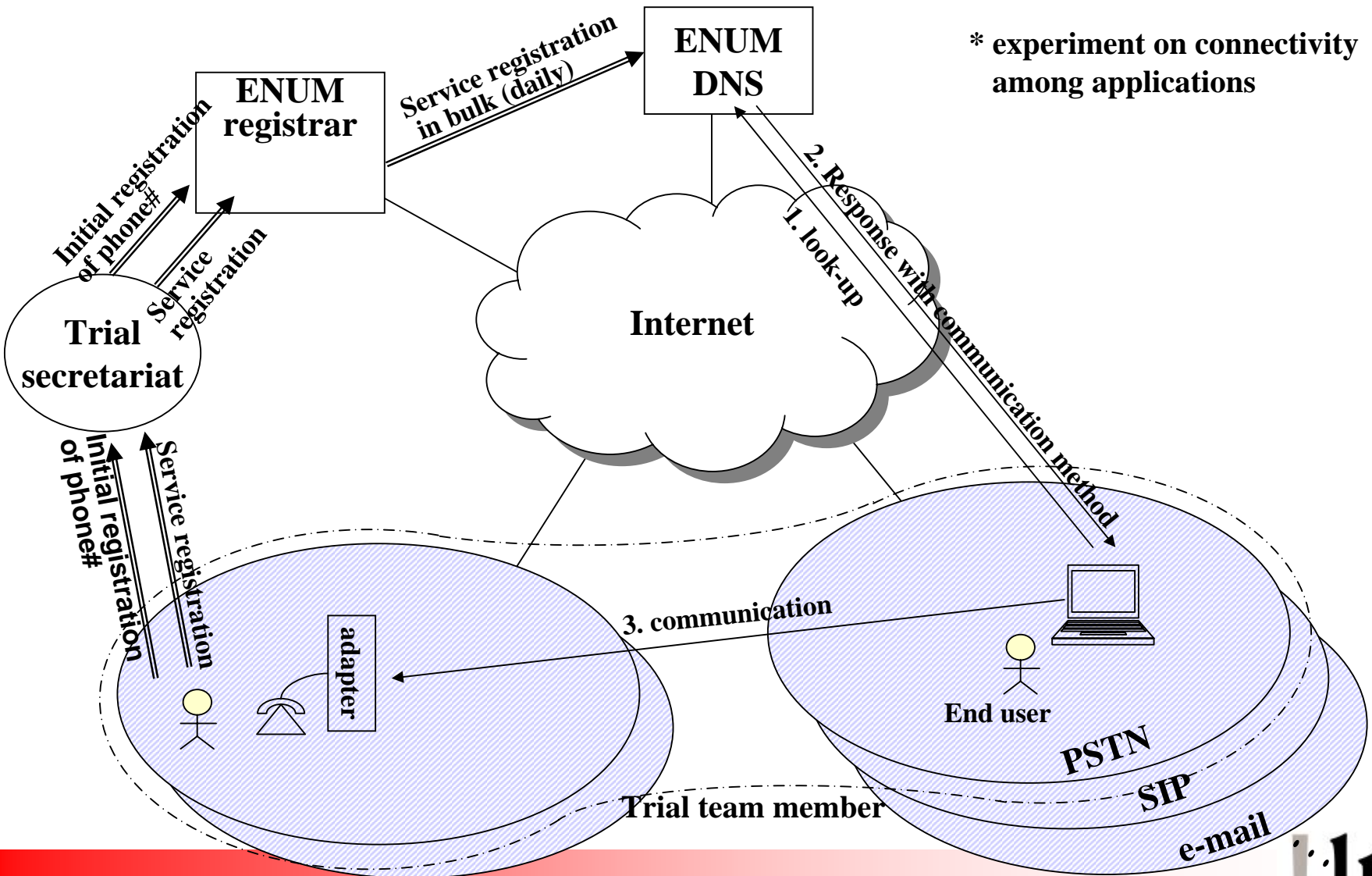
- **Depends on what model to select**
 - User ENUM / Operator ENUM
 - Requirements (such as Number-Portability?)
- **Typical requirements for Tier1 DNS:**
 - Handling of large zone
 - even over 100M entries (if all the numbers are held in Tier1)
 - Scalability and stability
 - Performance
- **Typical requirements for Tier2 DNS:**
 - Capability for frequent update
 - EDNS0 support ?
 - To hold a number of NAPTR RRs for a single E.164 number that may exceed 512 octets in one DNS packet

Consideration on DNS

- **Typical ENUM services like Web, Mail, SIP also lookup DNS.**
 - **Web: Hyper-links(A).**
 - **Mail: sending (MX, A), receiving (PTR).**
 - **SIP: service protocol (D2U/D2T NAPTR), service location(SRV), sip server(A)**
- **The number of DNS queries will increase when ENUM is deployed.**
- **Users are nervous about service quality.**
 - **Users don't care where the bottle neck is.**

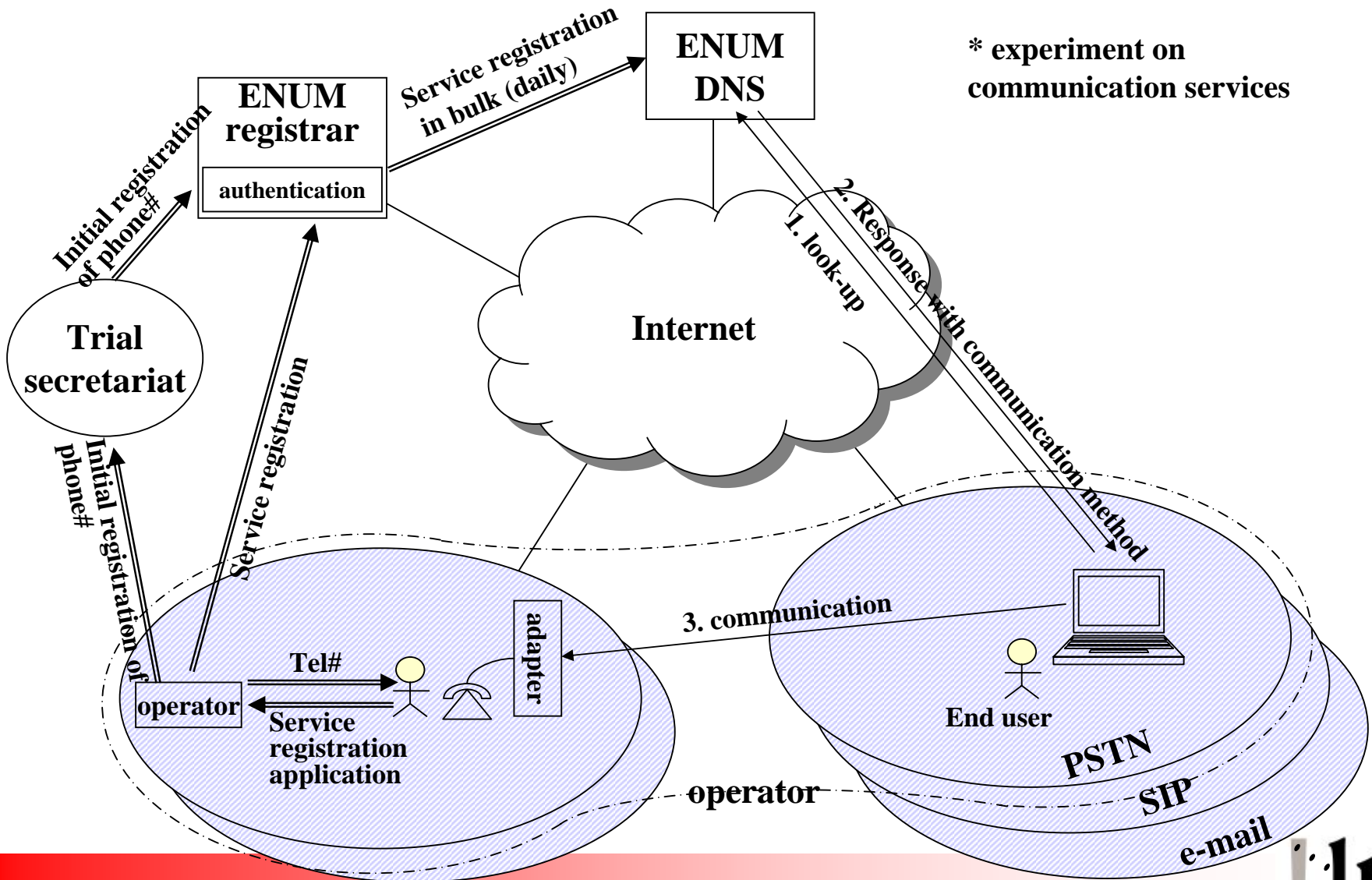
ENUM trial (phase1)

* experiment on connectivity among applications

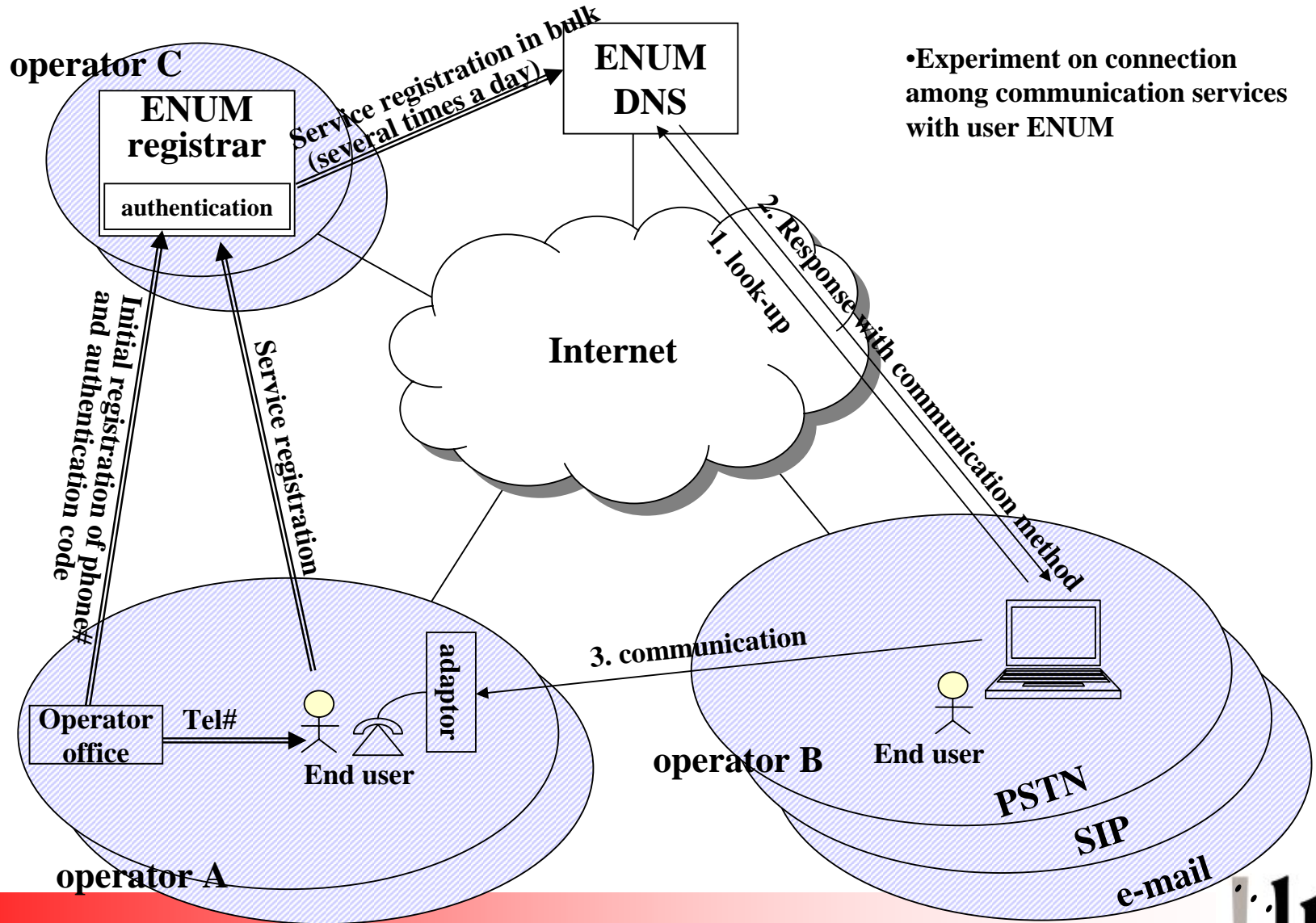


ENUM trial (phase2)

* experiment on communication services

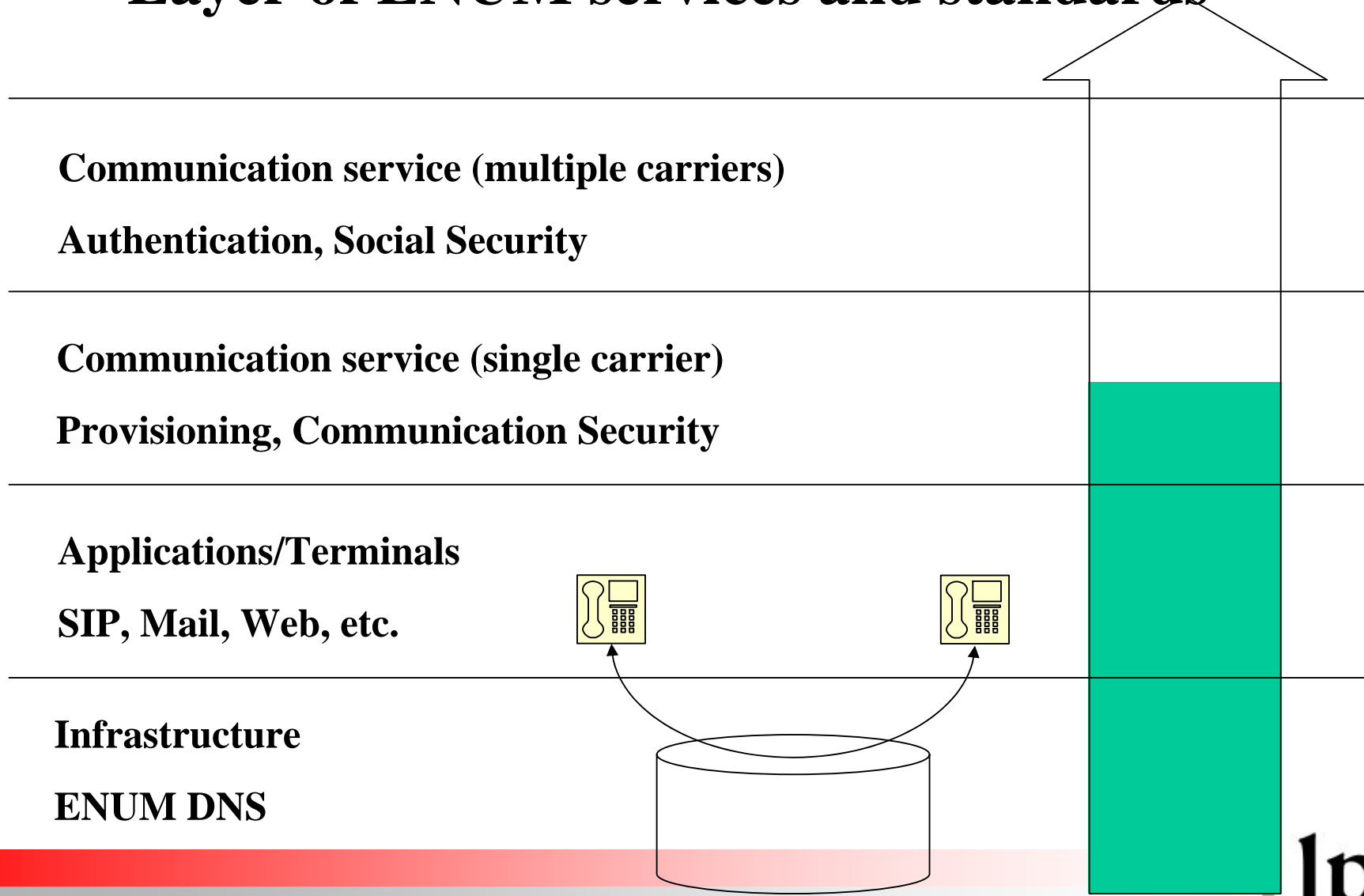


ENUM trial (phase3)



- Experiment on connection among communication services with user ENUM

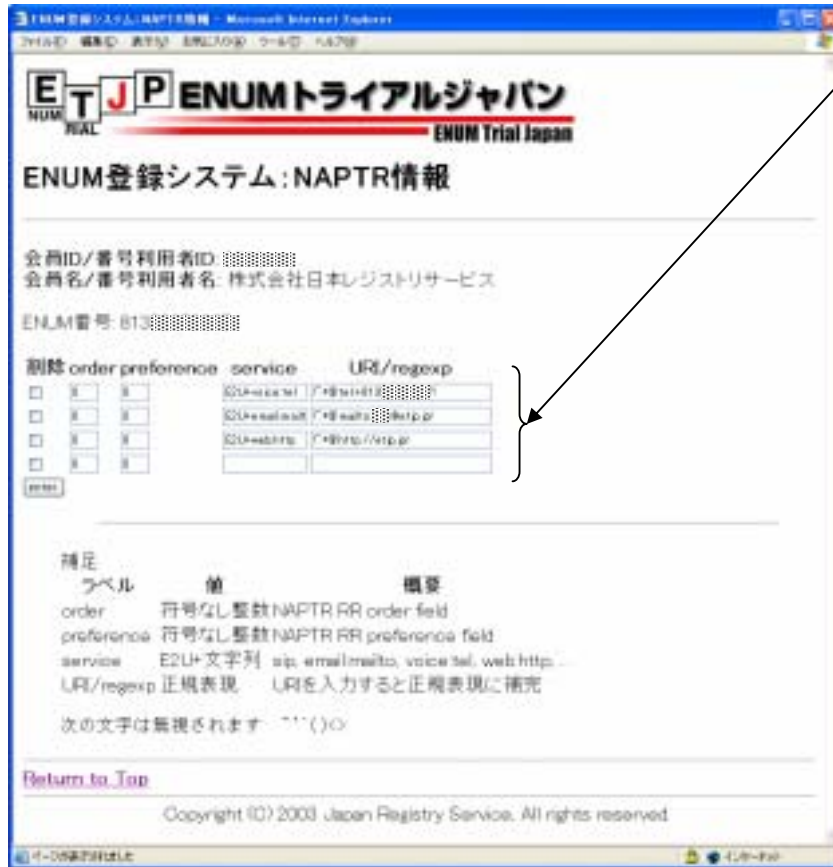
Layer of ENUM services and standards



ETJP Registration system (Phase 1)

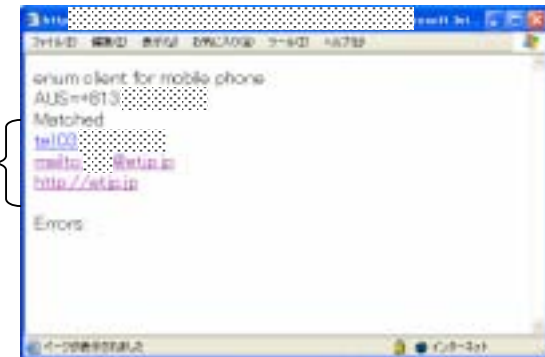
- **Each ETJP member can apply their preferred numbers as their trial E.164 numbers**
 - **The rules of the numbers to be registered in phase2 and 3 are under negotiation with the government**
- **Verification is performed by each member's ID and password**

NAPTR Registration Web I/F (Phase 1)



ETJP members can set their preferred NAPTR RRs to the trial DNS through this Web I/F.

- Those NAPTR RRs are updated within a few minutes.
- Can be examined via ENUM client-like Web I/F.

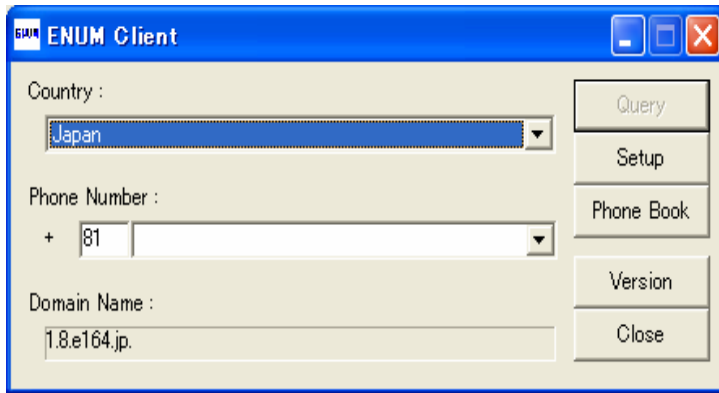


ETJP applications (Phase 1)

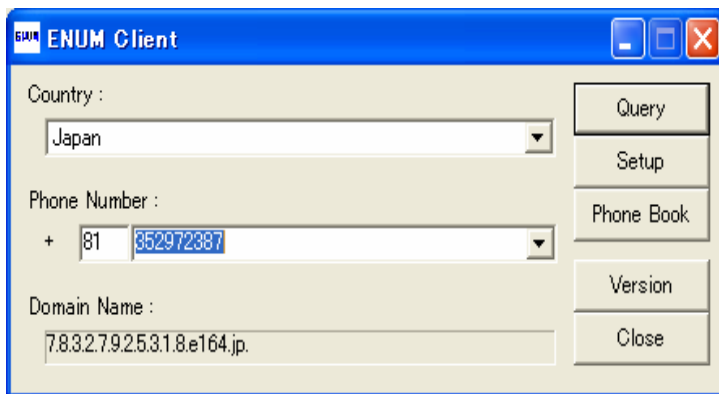
- **ENUM enabled SIP Proxy (Softfront)**
- **ENUM enabled VoIP Router (Yamaha, CISCO)**
- **ENUM enabled InternetFAX (Panasonic)**
- **Sample Software ENUM Client (JPRS)**
 - Available for the members
 - Object codes of runtime libraries used by the sample software are open to the members
 - API (under development)
 - **SetDNS** : specifies the DNS server
 - **SetAUS** : specifies the Telephone Number
 - **CreateAUS** : create the AUS Number using the locale info
 - **ENUMQuery** : look-up NAPTR records
 - **ENUMGetData** : picks up NAPTR records one by one
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More application and SDK

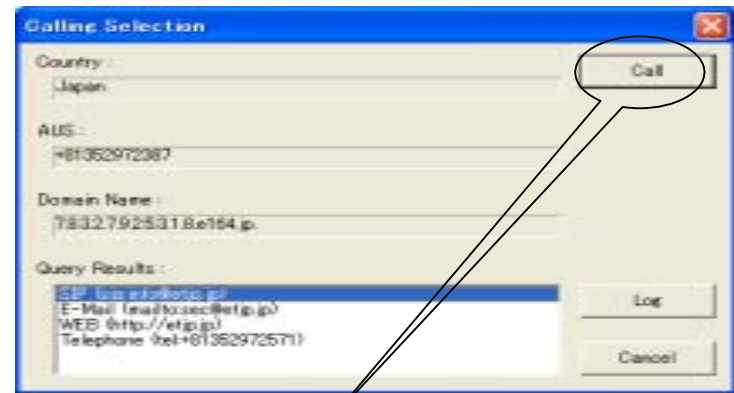
1) start



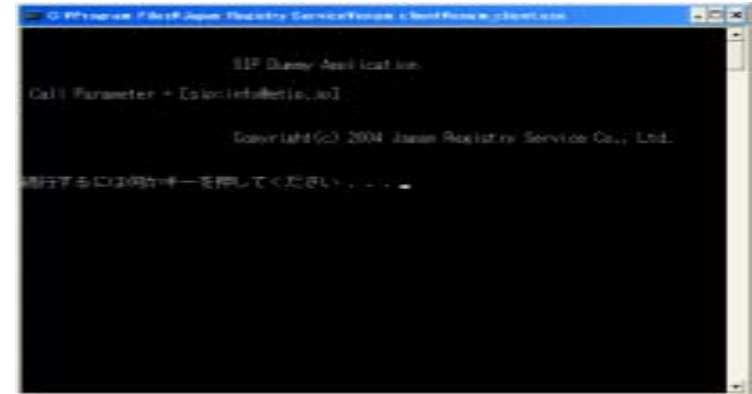
2) input telephone number and look-up



3) services are shown and select one



4) Start the communication service



References

- **ETJP**
 - <http://etjp.jp/> (in Japanese)
 - <http://etjp.jp/english/>
- **ENUM Study Group**
 - <http://www.nic.ad.jp/en/enum/>
- **JPRS**
 - <http://jprs.co.jp/enum/> (in Japanese)