NameFLOW update

42 IETF, Chicago

LDAP Service Deployment WG

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Current status

- **International Directory service**
- **> 5000 Organisations**
- **Ca. 2 million Entries**
- **Based on X.500(88) Quipu DSAs**
- **Not year 2000 compliant**
- **Early X.500 (93) multivendor test not successful**
- **Search optimization required**

Directions to go for

- **X.500 (88) Quipu software that is y2k compliant**
- **LDAP-only solution**
  - **LDAP v3 referrals**
- **"Hybrid" solution**
  - **Single vendor X.500(93) backbone**
  - **X.500(88) and LDAP DSAs on lower levels**

- **Indexing model for all possible solutions (DESIRE II)**

NameFLOW LDAP Pilot architecture
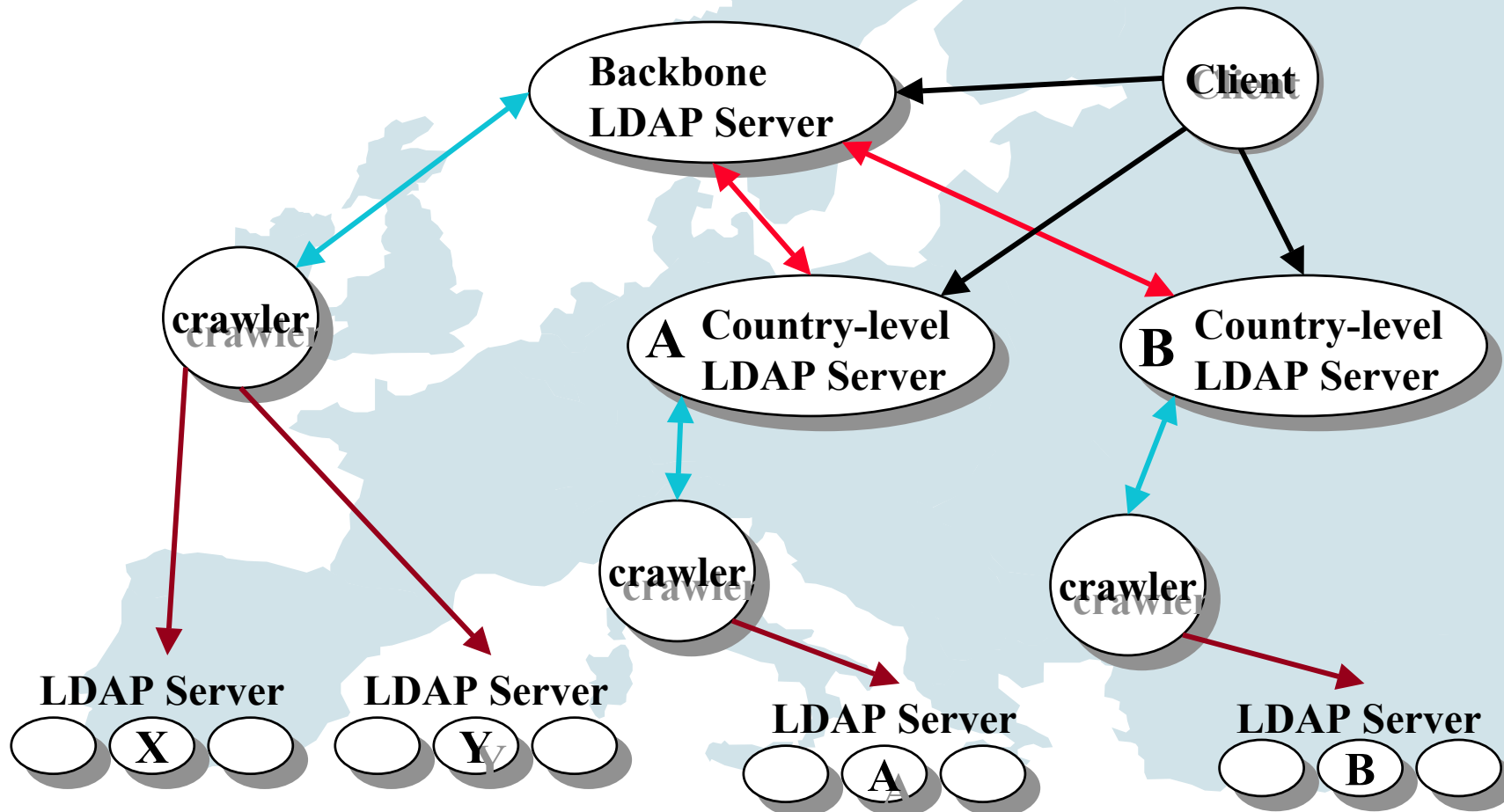
LDAP Pilot architecture (cont.)

- **National LDAP index servers**
- **DANTE could offer index services to countries without their own servers**
- **'Backbone' LDAP server operated by DANTE**
- **Missing knowledge information substituted by indices**
- **NameFLOW approved LDAP clients and Web gateways**

Hybrid solution architecture
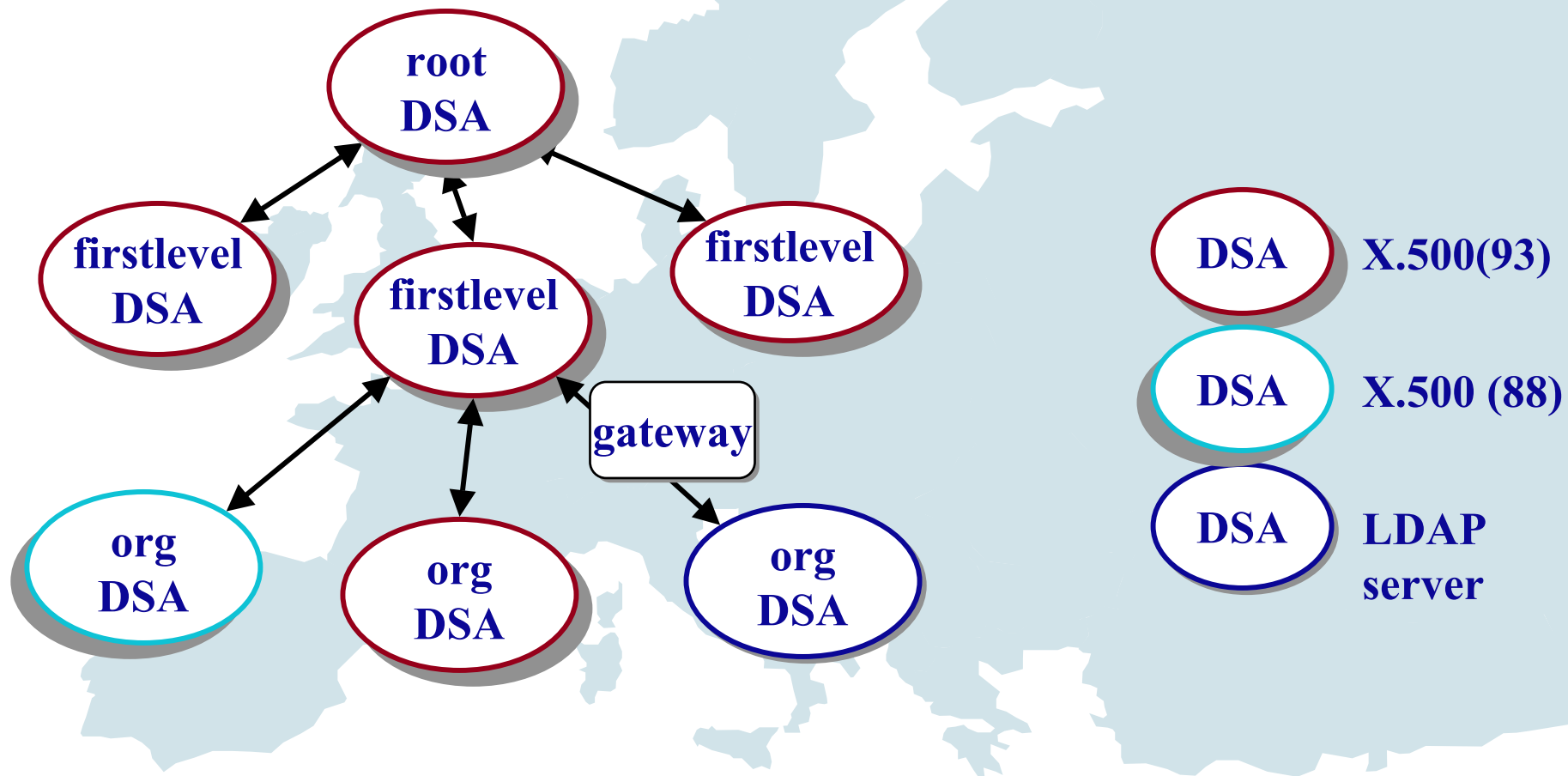
Hybrid solution architecture (cont.)

- **Root DSA and first level DSAs single vendor X.500(93)**
- **Root context management (RFC 2120)**
- **Knowledge information includes LDAP servers**
- **LDAP servers connected via X.500-LDAP gateway**
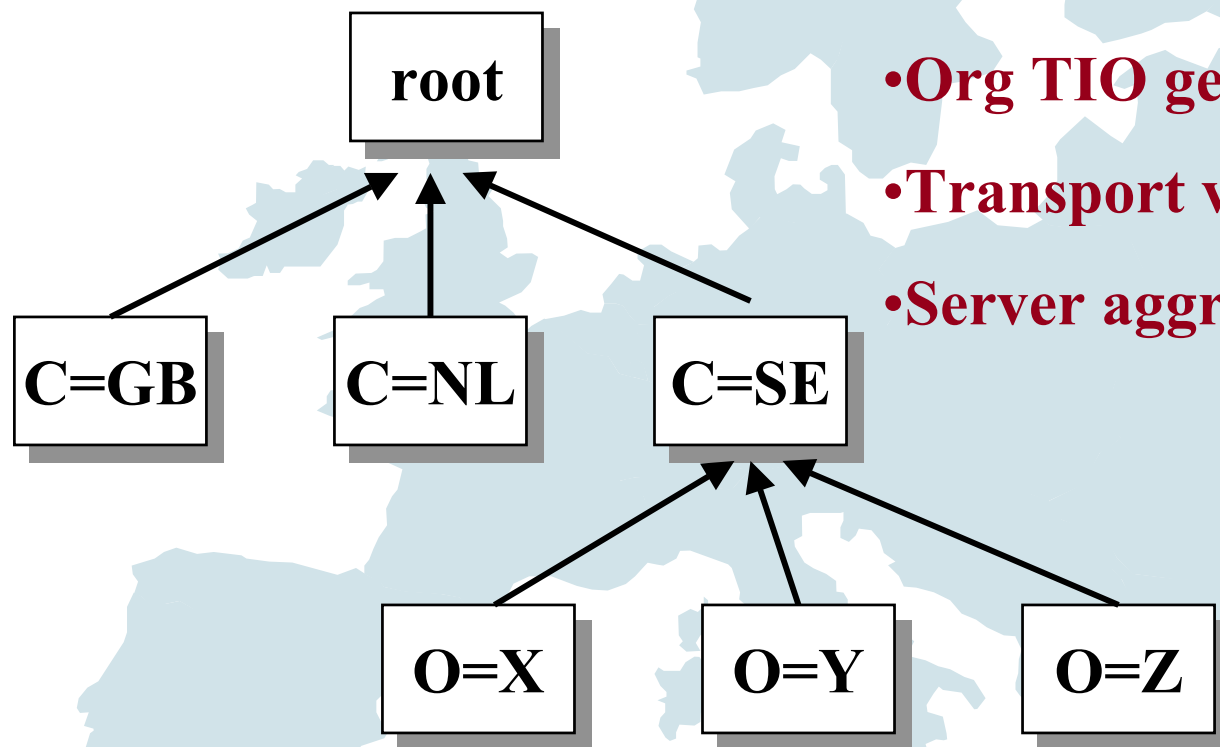- **Integration of an indexing system**

DESIRE II

- **Distributed Index system part of DESIRE II project**
- **Development of a European Service for Information on Research and Education**
- **European Union's Telematics Applications Programme**
- **10 European Partners**
- **Information discovery, integrated in a Web-centered model**
- **Integration of other distributed information services**
- **Metadata management**

Distributed Index system

- **Hierarchical topology**
- **LDAP v3 technology**
- **Managed by the server side**
- **Index server registration**
- **Subset of CIP**
  - **Dataset Identifier (DSI)**
  - **Base URI for generating referrals**
- **Usage of the Tagged Index Object (TIO)**
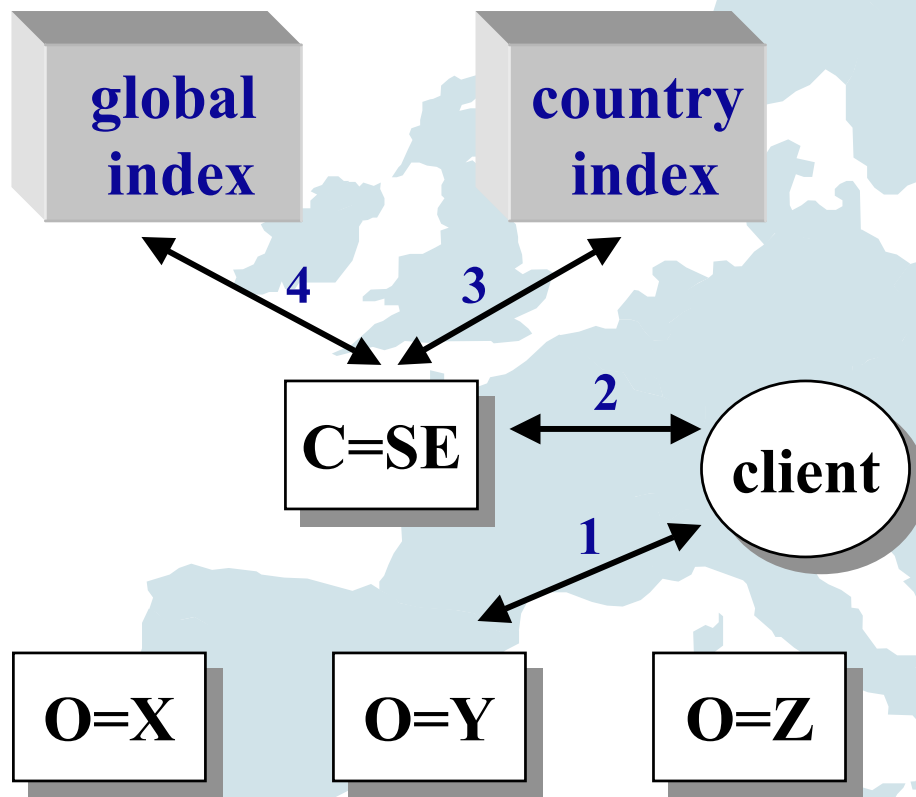 - **Tag identifies common attributes of an entry**

Index aggregation

```
                    ┌────────┐
                    │  root  │
                    └────────┘
                   ↗     ↑     ↖
        ┌────────┐  ┌────────┐  ┌────────┐
        │ C=GB   │  │ C=NL   │  │ C=SE   │
        └────────┘  └────────┘  └────────┘
                           ↗    ↑    ↖
              ┌────────┐  ┌────────┐  ┌────────┐
              │  O=X   │  │  O=Y   │  │  O=Z   │
              └────────┘  └────────┘  └────────┘
```

- Org TIO generated by crawlers
- Transport via FTP or email
- Server aggregate TIOs

Index distribution

root

C=GB   C=NL   C=SE

O=X   O=Y   O=Z
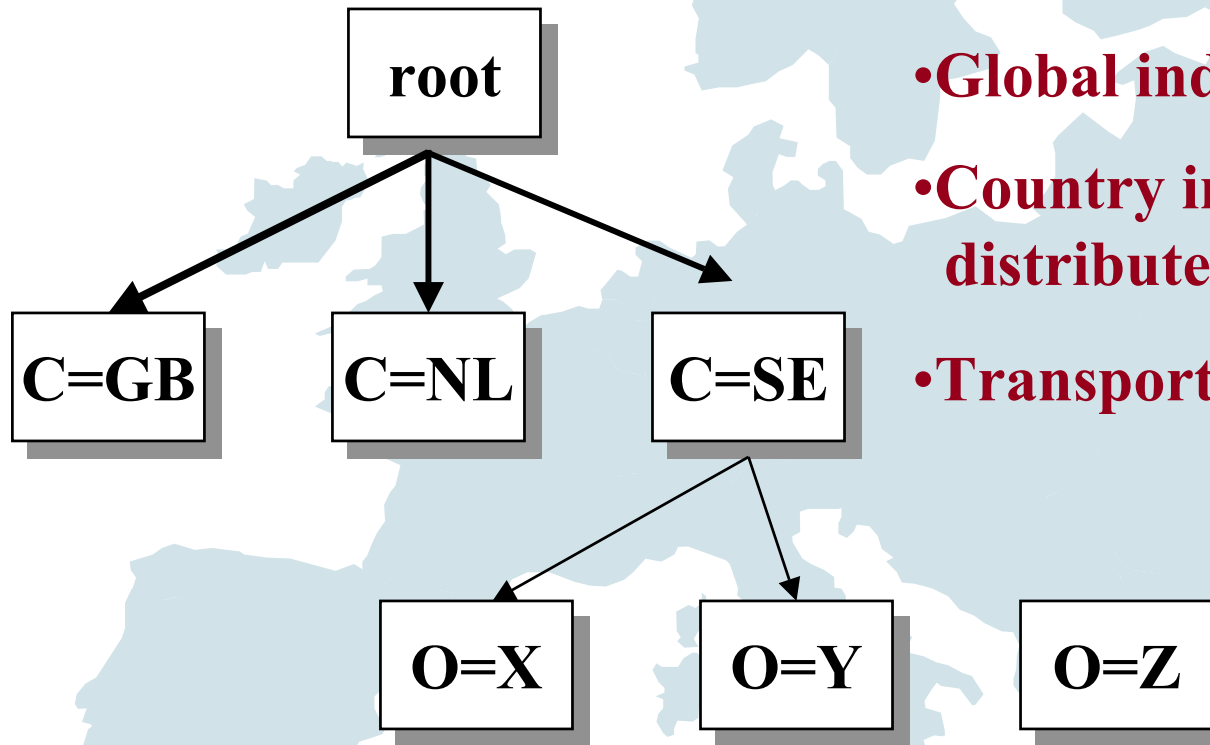
- Global index to country level
- Country index can be distributed downwards
- Transport via FTP or email

Index query routing

1. Client searches local server

2. Client searches country level server (CLS)

3. CLS looksup country index

4. CLS looksup its copy of the global index

Problems of CIP

- **DSI and base URI not part of the index object**
  - Chain of indirect referrals
  - Increases search time
- **DN is part of the index object**
  - Centroid size grows linear
- **Tokenisation**
  - Tokenisation of e.g. email-addresses might produce negative referrals

Partners / more info

- **SURFnet**
- **University of Brunel**
- **University of Lund**

- **More Info:**
  - **http://www.dante.net/nameflow.html**
  - **nameflow@dante.org.uk**