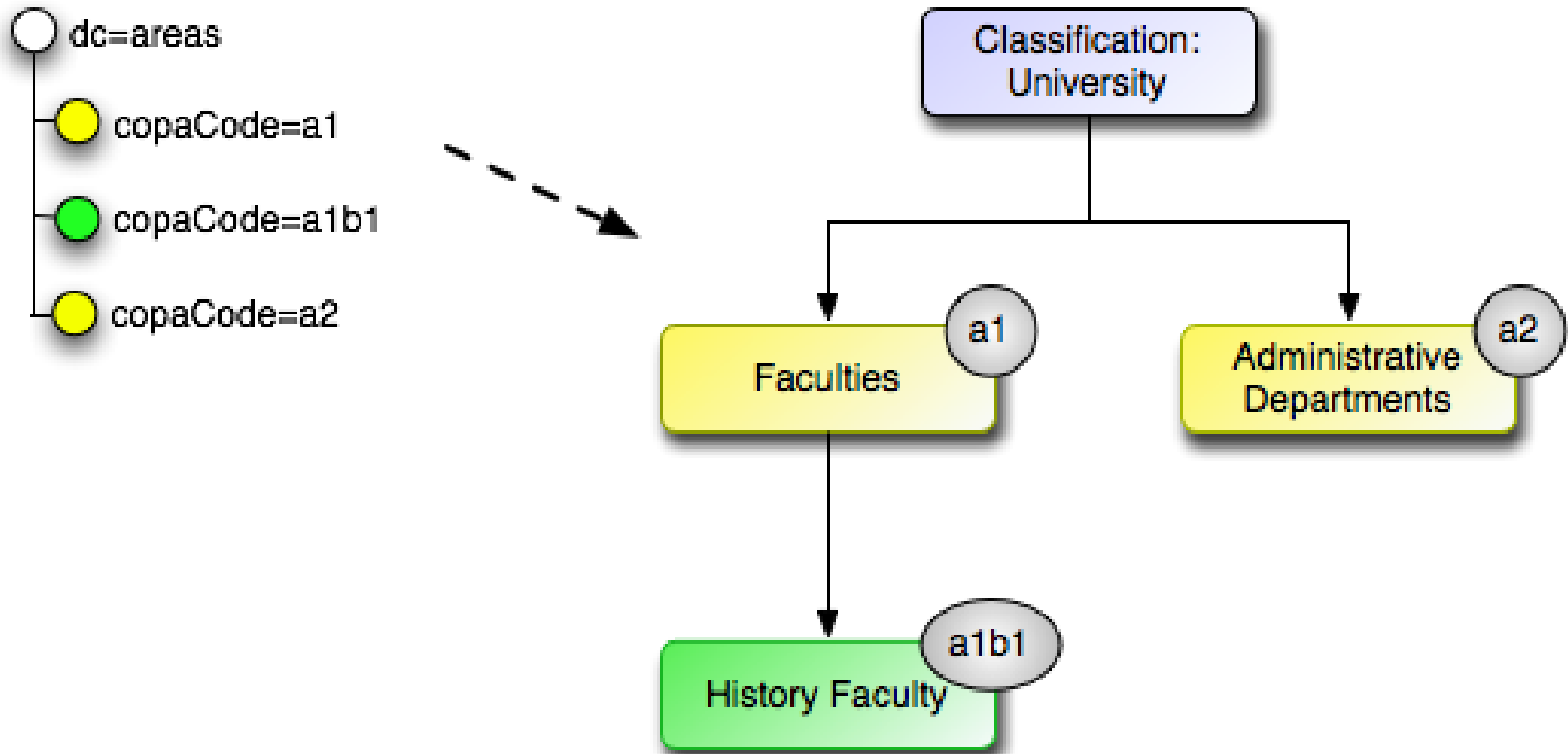- COPA is a coding schema that allows effective searches in hierarchical structures.

- It's able to perform searches using metadata that is included in the pre-existing structure.

- Elements in COPA
  - Classifications
    - A set of areas in a tree structure
    - Alphanumeric codes (COPA code)
    - Relationships between different areas
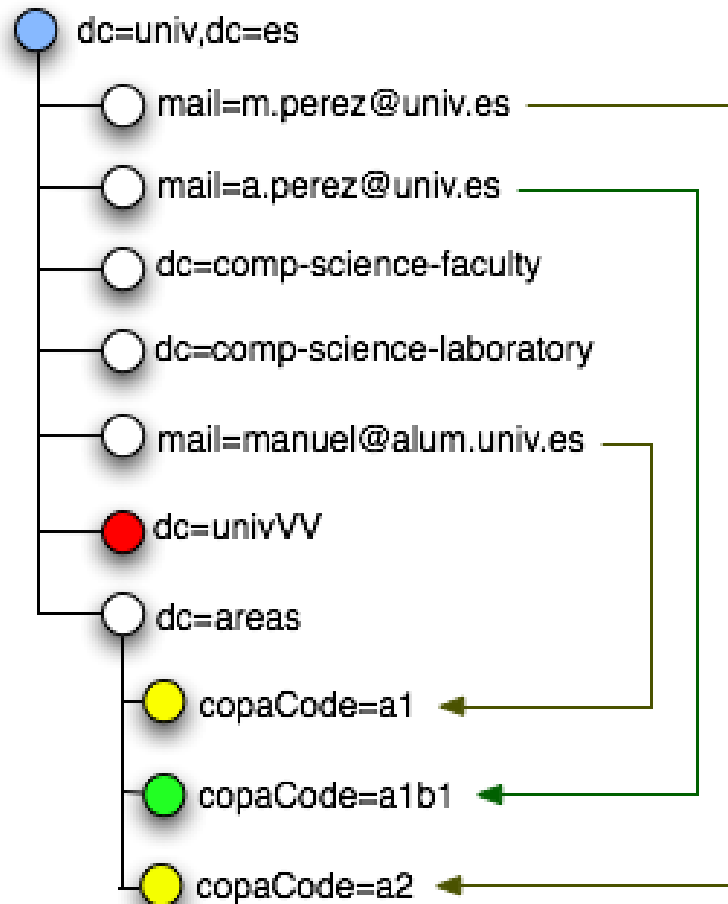   - Either different classifications

COPA in a nutshell

dc=areas

copaCode=a1

copaCode=a1b1

copaCode=a2

Classification: University

Faculties   a1

Administrative Departments   a2

History Faculty   a1b1

COPA

- Resources
  - Elements are associated to areas of different classifications
- **Main goal**:
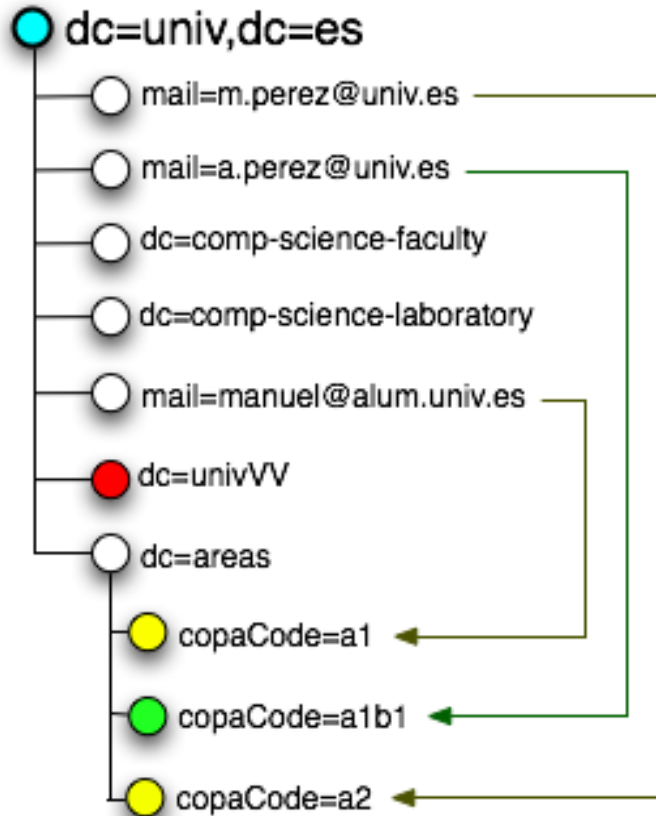 - Create virtual views over a LDAP server

Plain LDAP

- dc=univ,dc=es
  - mail=m.perez@univ.es
  - mail=a.perez@univ.es
  - dc=comp-science-faculty
  - dc=comp-science-laboratory
  - mail=manuel@alum.univ.es
  - dc=univVV
  - dc=areas
    - copaCode=a1
    - copaCode=a1b1
    - copaCode=a2

COPA-based Virtual View

- dn=univ,dc=es
  - University
    - Faculties
      - History Faculty
        - mail=manuel@alum.univ.es
    - Administrative Departments
      - mail=m.perez@univ.es
      - mail=a.perez@univ.es

- ## COPA

    - ### Goal: applications understand COPA automatically.

    - ### New object classes

        - #### copaVirtualViewNav

            - Defines which virtual views are available for navigate

        - #### copaVirtualViewSpec

            - Configuration of a virtual view

                - Where and how are areas defined

                - Which attribute is used for making a relationship between an entry and an area

            - DN are bad guys, URN are good

        - #### copaArea

            - Generic object for defining an area

        - #### copaResource

            - Generic object for making a relationship between an entry and an area

Plain LDAP

- dc=univ,dc=es
  - **objectClass**
    - organizationalUnit
    - dcObject
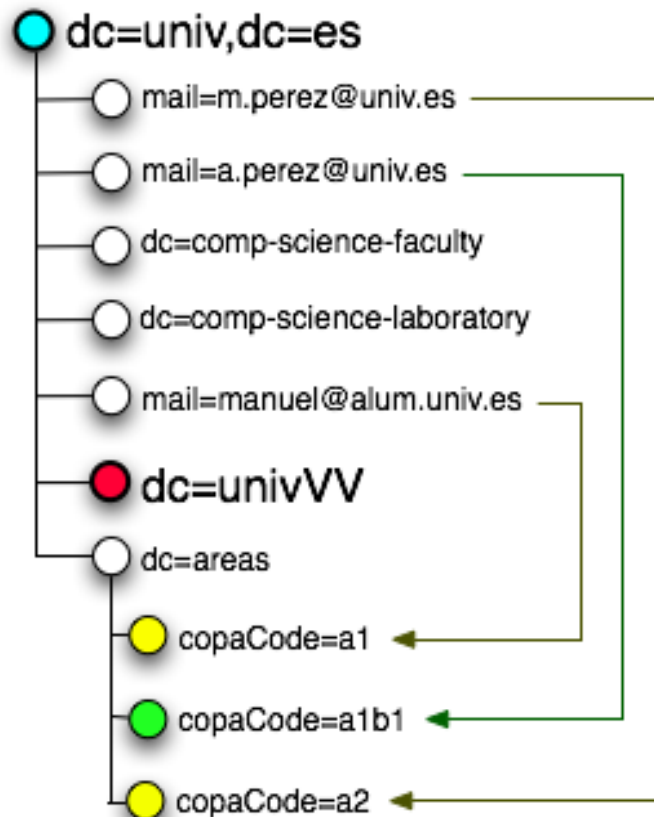   - copaVirtualViewNav
  - **dc**
    - univ
  - **ou**
    - univ
  - **copaDefVvNav**
    - dc=univVV,dc=univ,dc=es

MINISTERIO
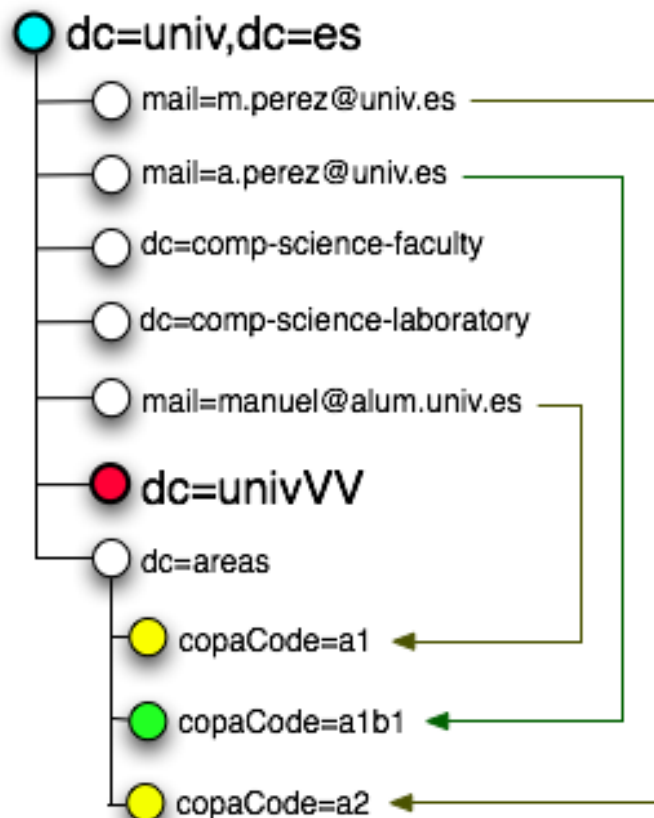DE INDUSTRIA, TURISMO
Y COMERCIO

red.es
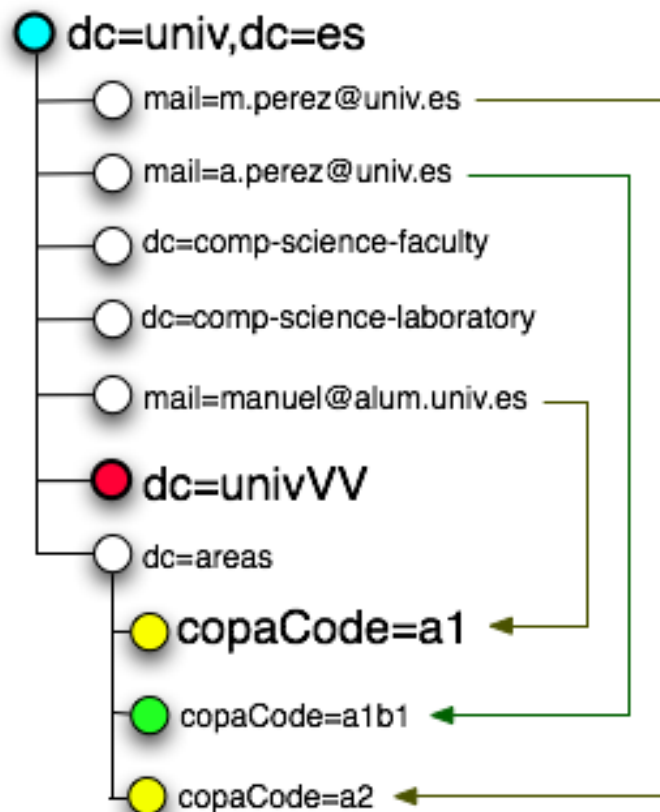
Plain LDAP

- **dc=univVV,dc=univ,dc=es**
  - **objectClass**
    - dcObject
    - copaVirtualViewSpec
  - **dc**
    - univVV
  - **copaName**
    - University
  - **description**
    - An hierarchy of the university
  - **copaPrefix**
    - urn:mace:rediris.es:virtualview:univ:20061101-1.0
  - **copaCodeAttr**
    - copaCode
  - **copaPrintAttr**
    - copaName

Red IRIS

Plain LDAP

- **dc=univVV,dc=univ,dc=es**
  - **copaCodeResourceAttr**
    - copaCode
  - **copaClassifBase**
    - dc=areas,dc=univ,dc=es
  - **copaAreaObjectClassName**
    - copaArea

MINISTERIO
DE INDUSTRIA, TURISMO
Y COMERCIO

red.es

Plain LDAP

- copaCode=a1,dc=areas,dc=univ,dc=es
    - **objectClass**
        - copaArea
    - **copaName**
        - Faculties
    - **description**
        - List of faculties
    - **copaAreaCode**
        - a1

RedIRIS

- ## COPA operations in a LDAP server (I)

  - ### Set the beginning of a COPA-based navegation
    - Adding the object class *copaVirtualViewNav*

  - ### Get a list of available virtual views
    - Which the default navigation is

  - ### Get a list of areas
    - DN of the used virtual view
    - Optional: COPA code of the parent area

  - ### Get info about an area
    - DN of the used virtual view
    - COPA code of the area

- # COPA operations with a LDAP server (II)
  - Get a list of resources
    - Base DN of the search
    - DN of the used virtual view
    - COPA code of the area