# TF-NGN AAA research

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Utrecht University

# Contents of this talk



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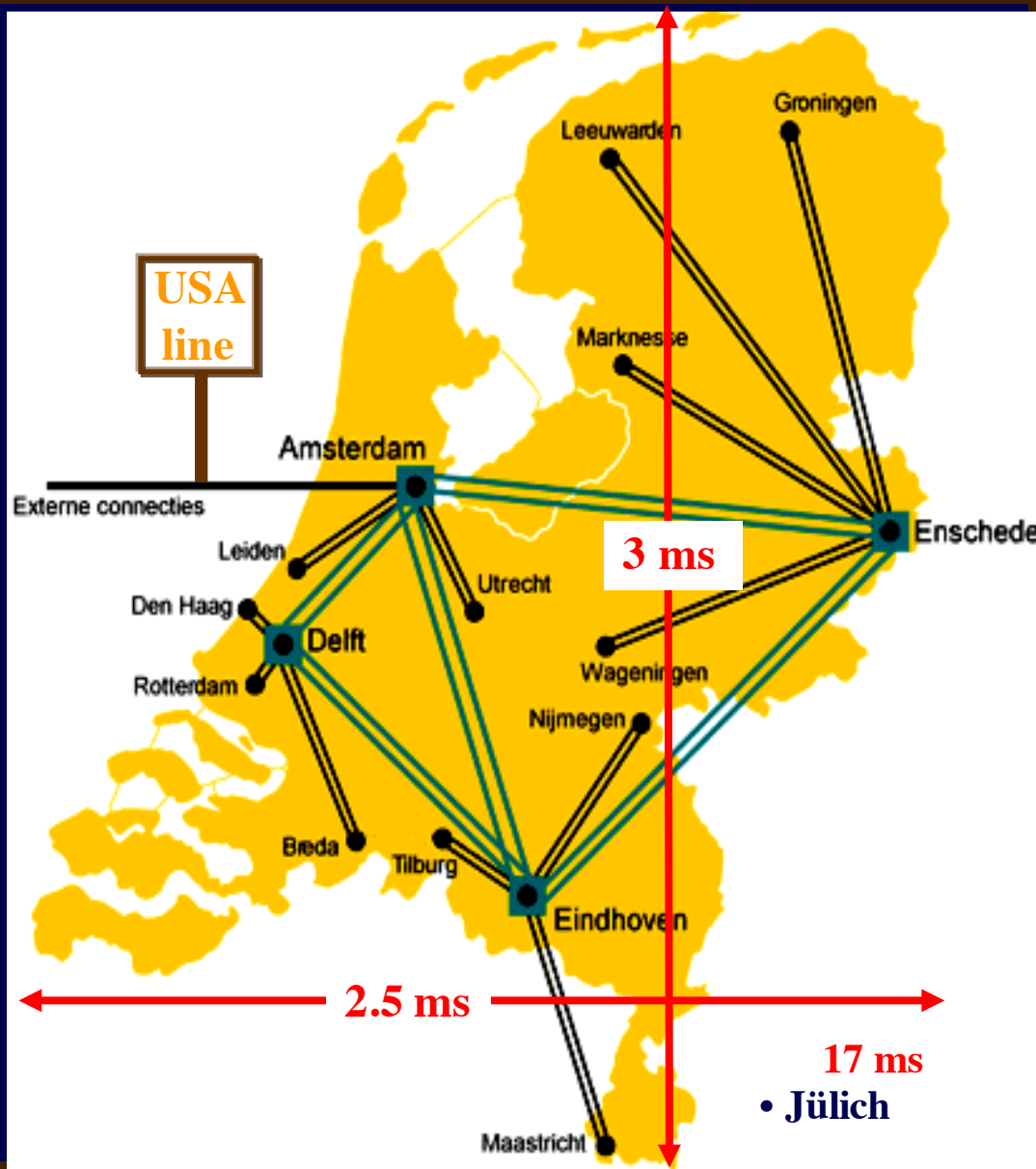
# Physics-UU to IPP-FZJ => 7 kingdoms

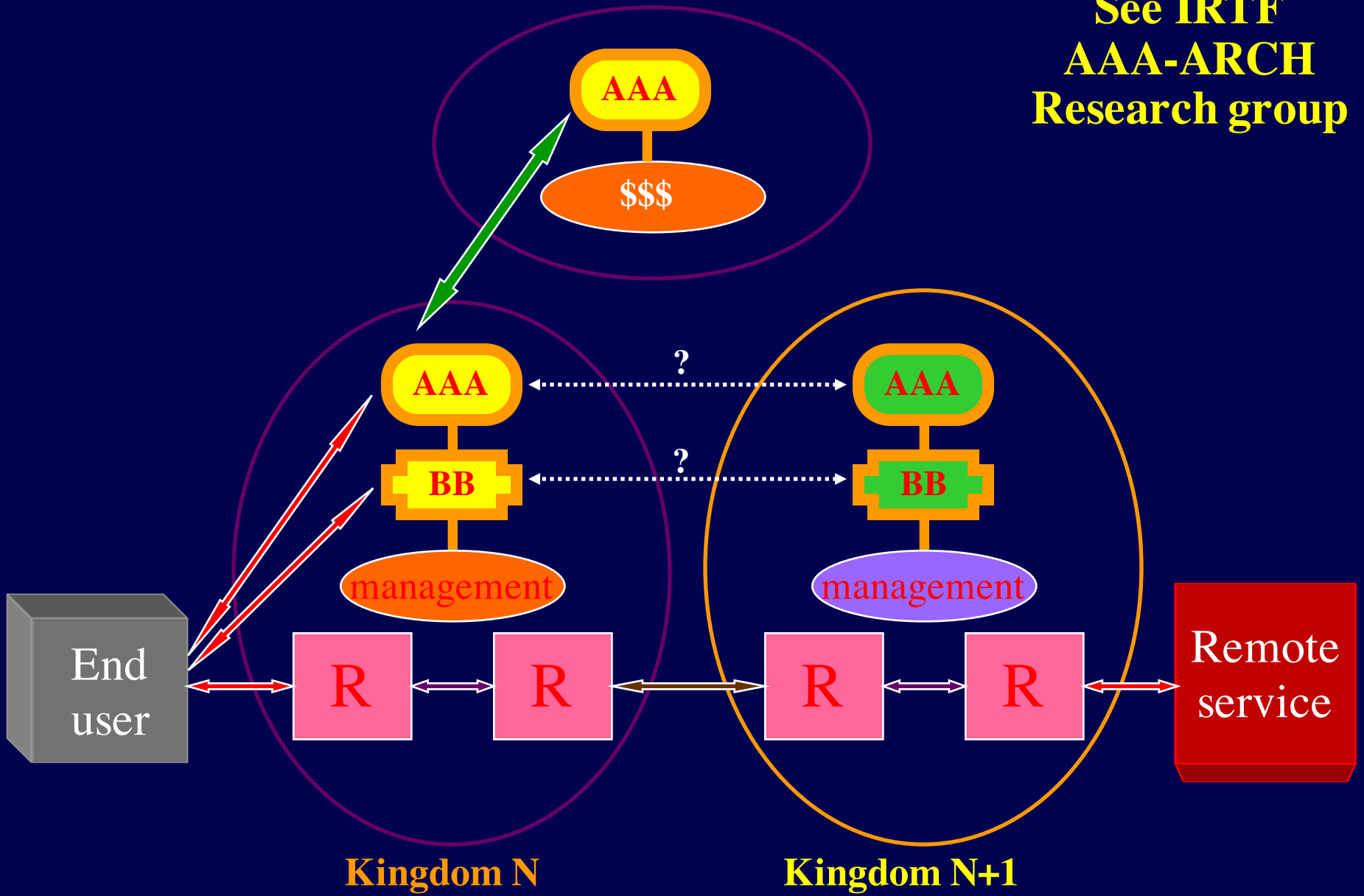
- Netherlands
  - » Physics dept
  - » Campus net
  - » SURFnet
- Europe
  - » TEN 155
- Germany
  - » WINS/DFN
  - » Juelich, Campus
  - » Plasma Physics dept



# The need for AAA



**See IRTF AAA-ARCH Research group**



# Policy based networking example



Experiment

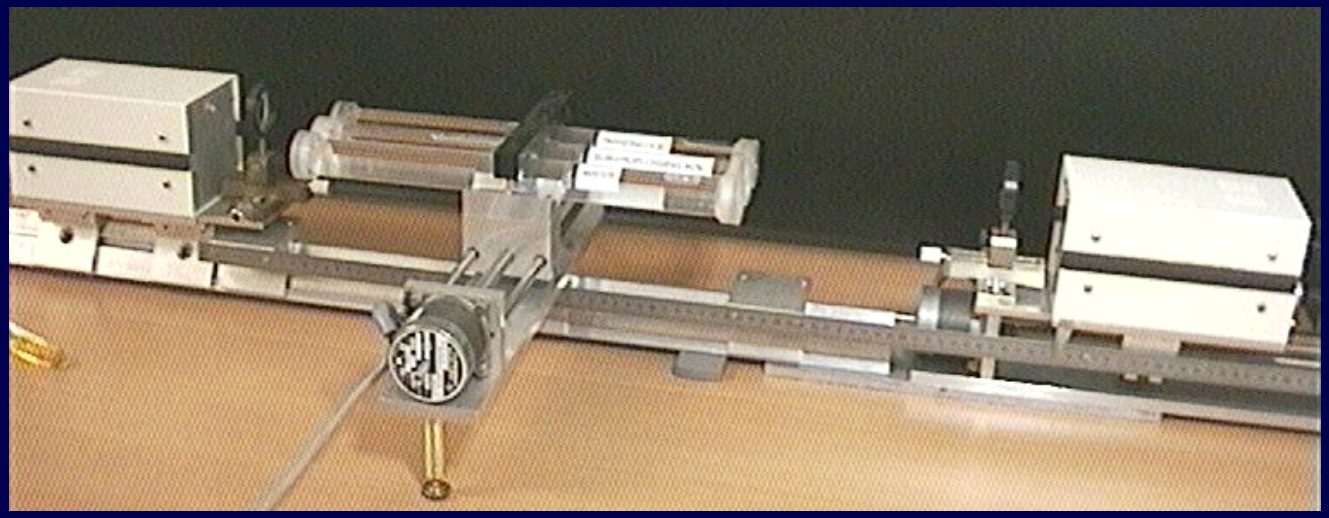
Pc

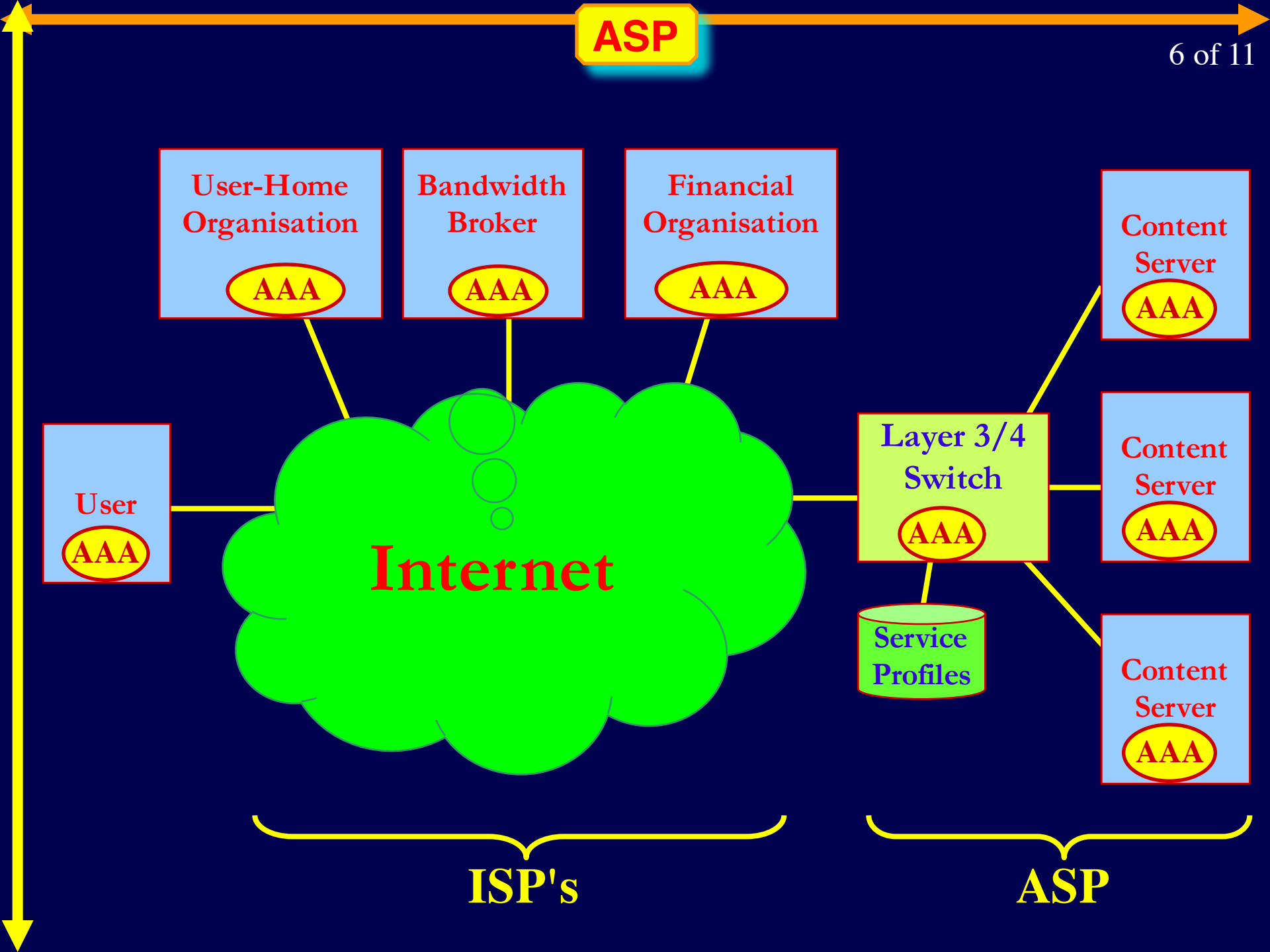
Camera

Macintosh

Policy based networking switch with > layer 4 AAA functionality

AAA




User-Home Organisation
AAA
Bandwidth Broker
AAA
Financial Organisation
AAA
Content Server
AAA
User
AAA
Internet
Layer 3/4 Switch
AAA
Content Server
AAA
Service Profiles
Content Server
AAA
ISP's
ASP

# Content

# Portals Brokers

# Customers

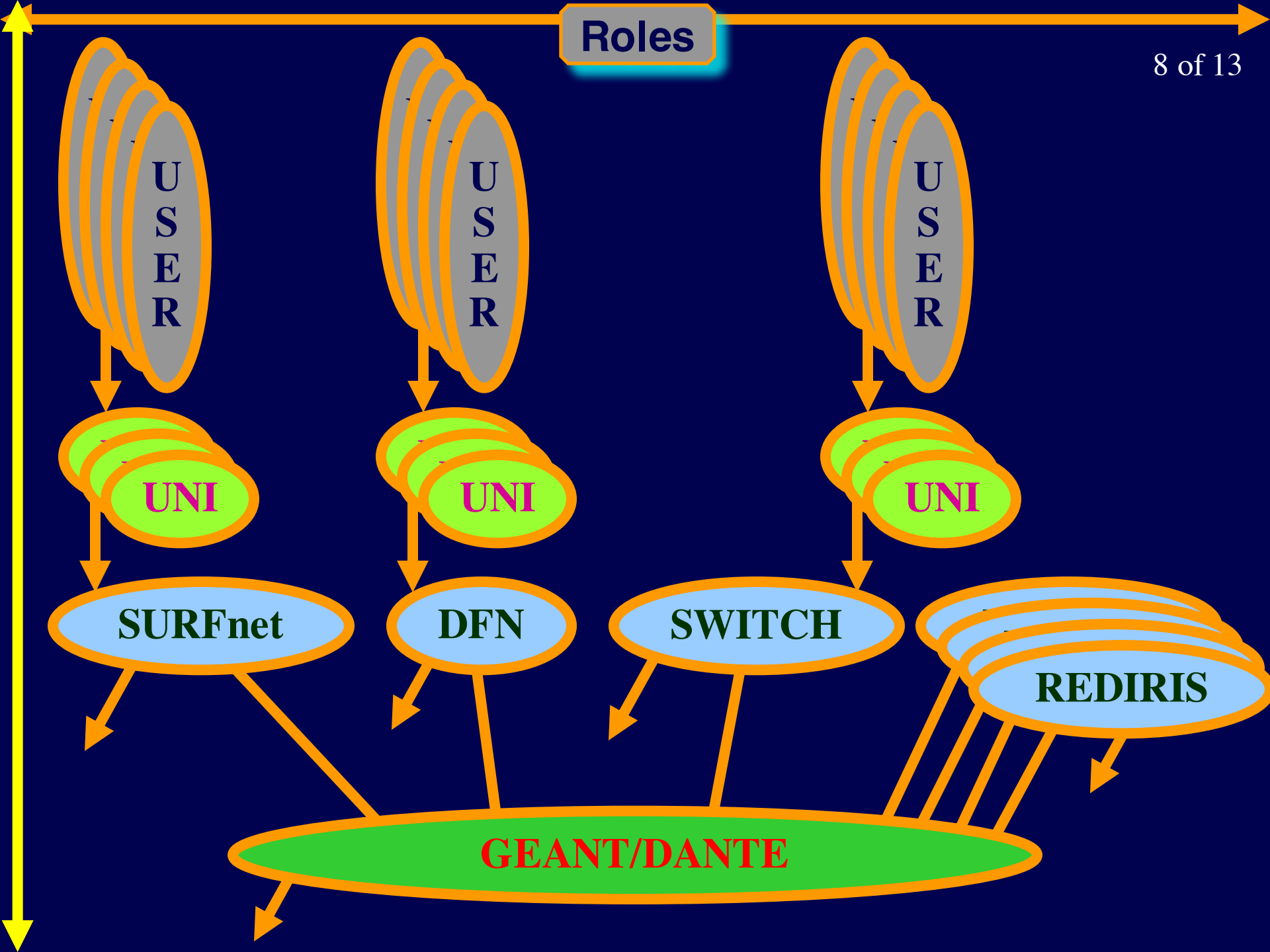
University

Hogeschool

Library

NOB

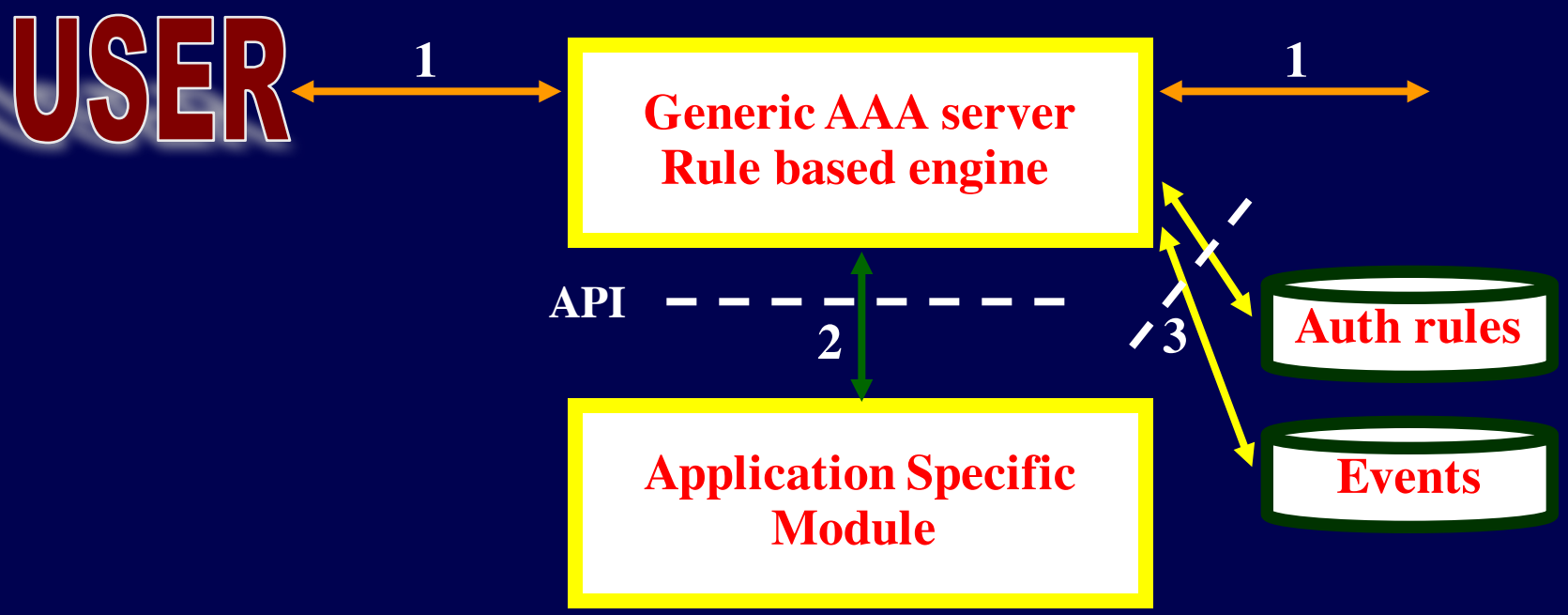
SURFnet


Roles
USER
USER
USER
UNI
UNI
UNI
SURFnet
DFN
SWITCH
REDIRIS
GEANT/DANTE

# AAA Server building block



**Rule example: Auth_A = (B>9) .or. C .and. D**




**Types of communication:**

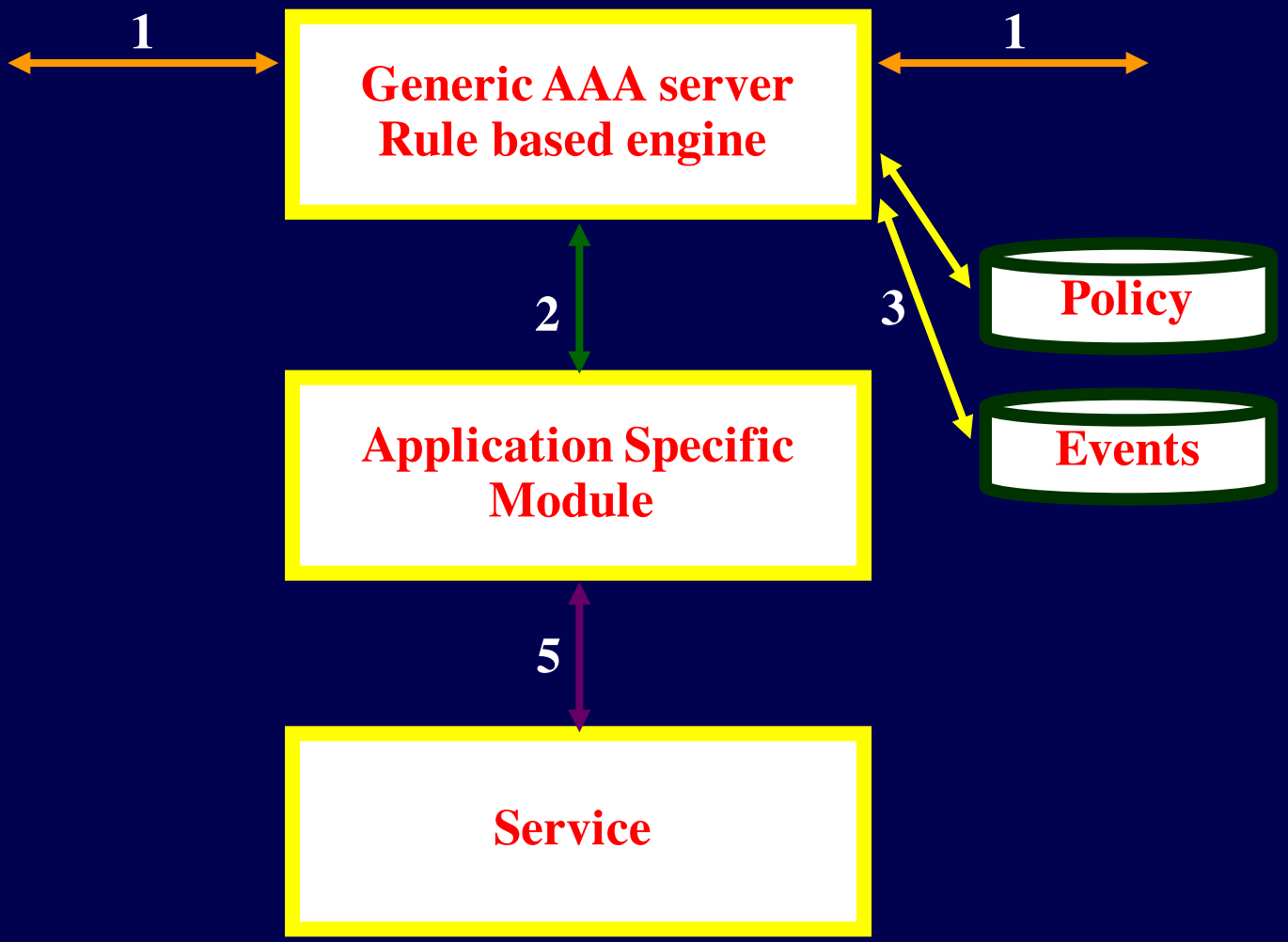
**1: "The" AAA protocol**

**2: interface (API) to app specific module (addressing!)**

**3: interface (API or connection) to repositories (e.g. LDAP)**

# Pushing the buttons



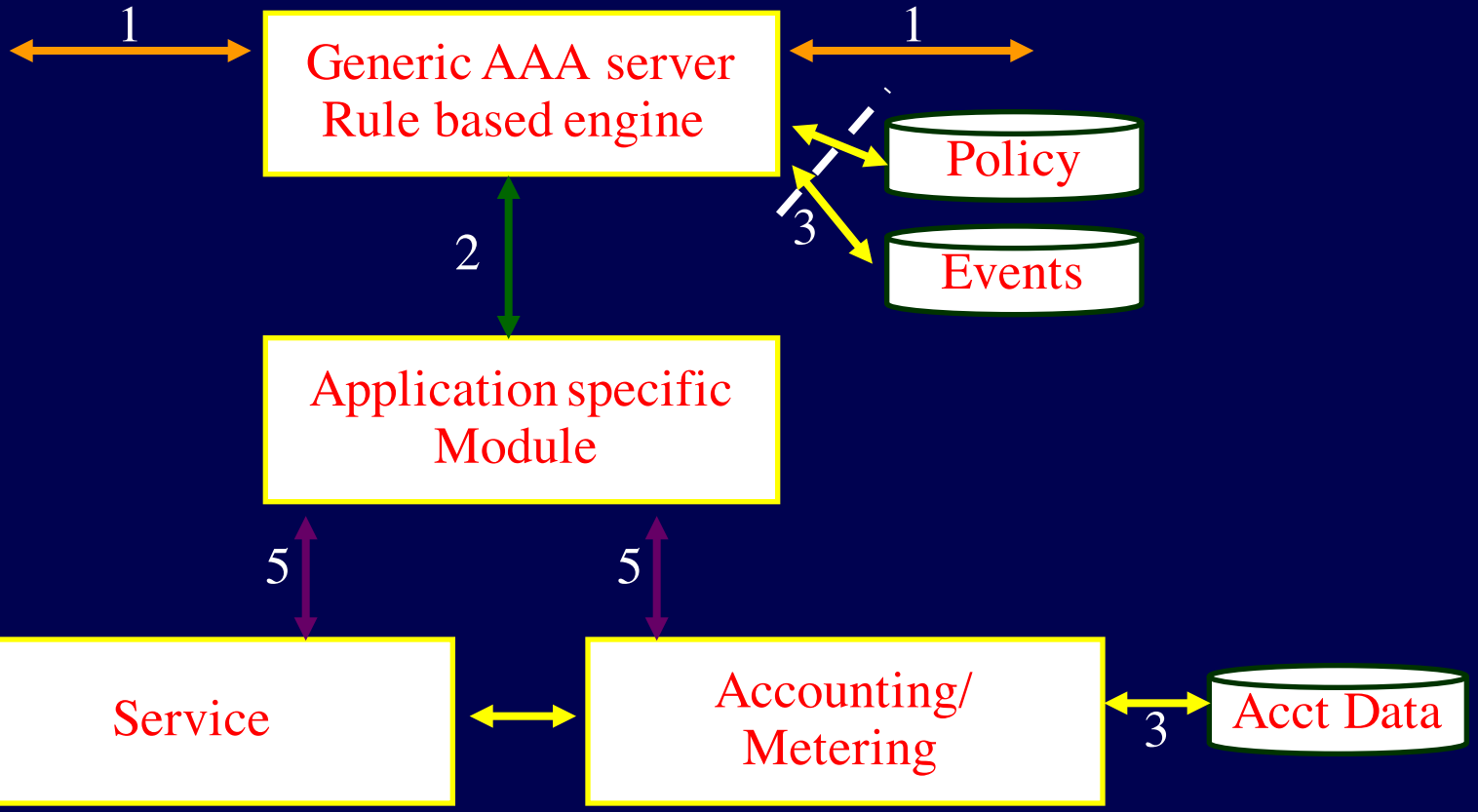



**Types of communication:**

**5: Towards service (f.e. COPS, CLI, SNMPv3)**

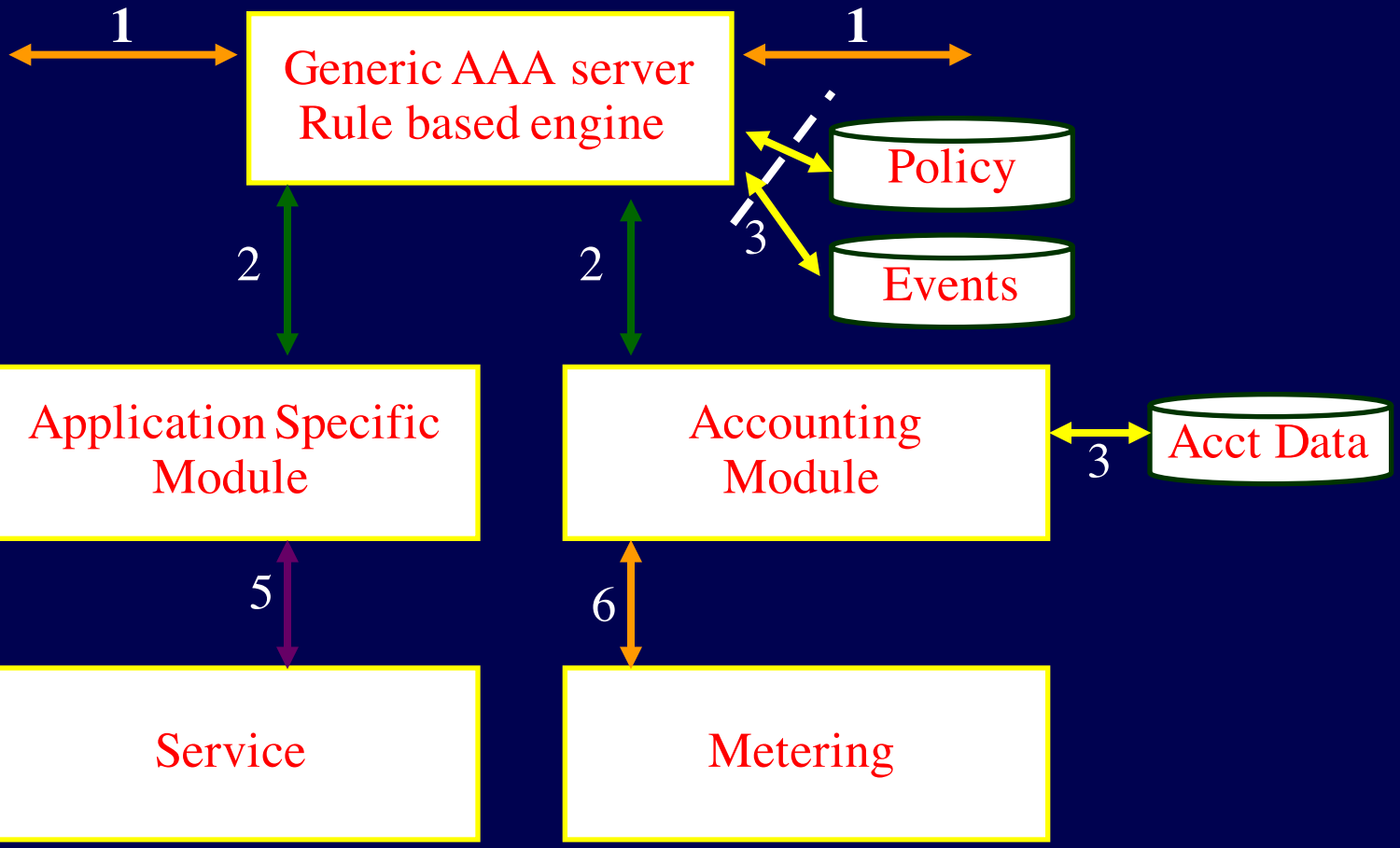
# AAA Server with Accounting as Part of the Service





# AAA Server with Accounting as Separate Service

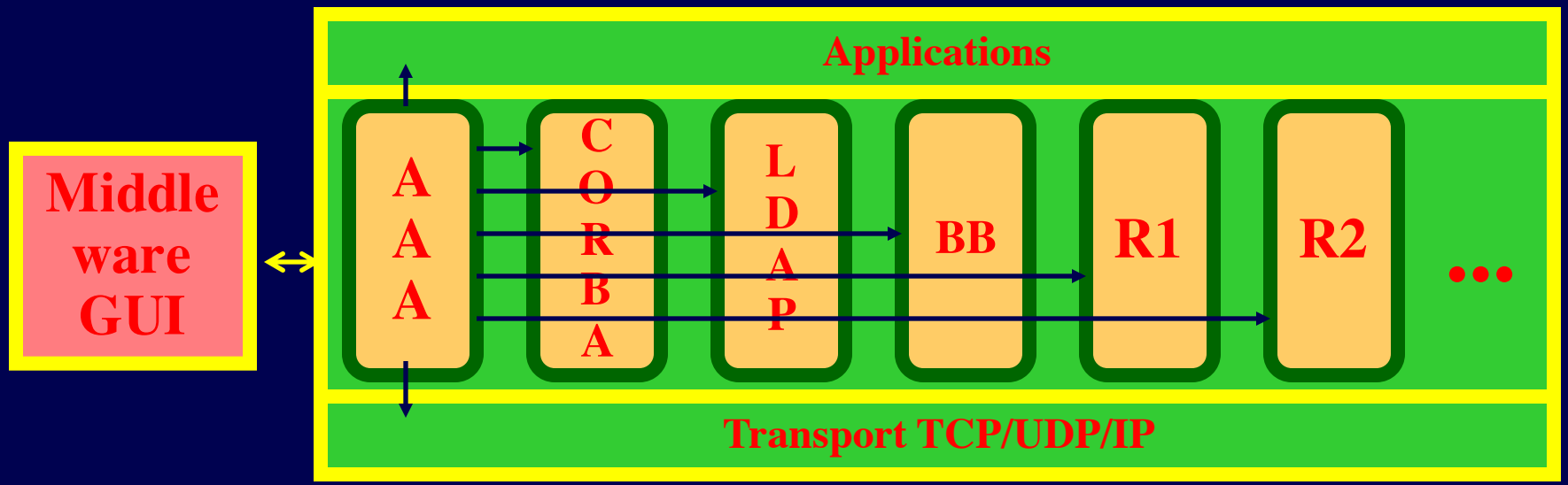




# Questions

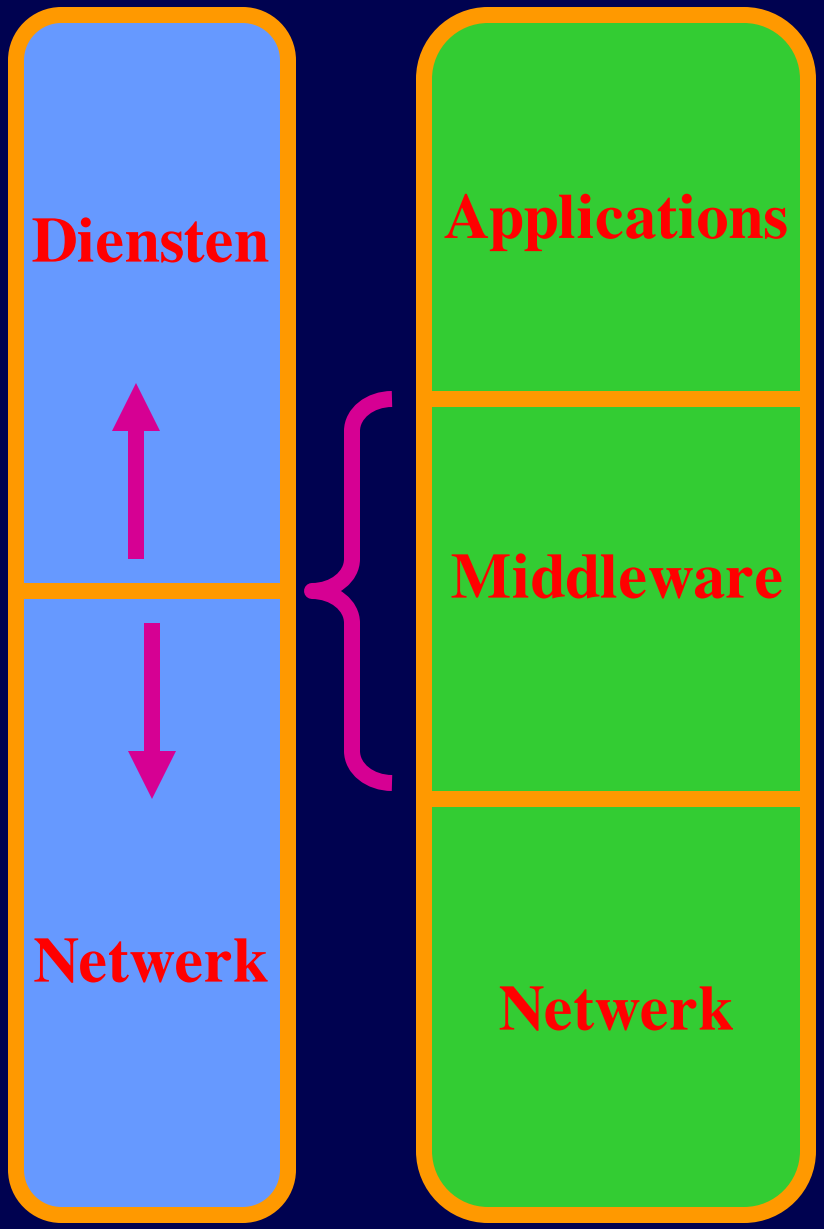


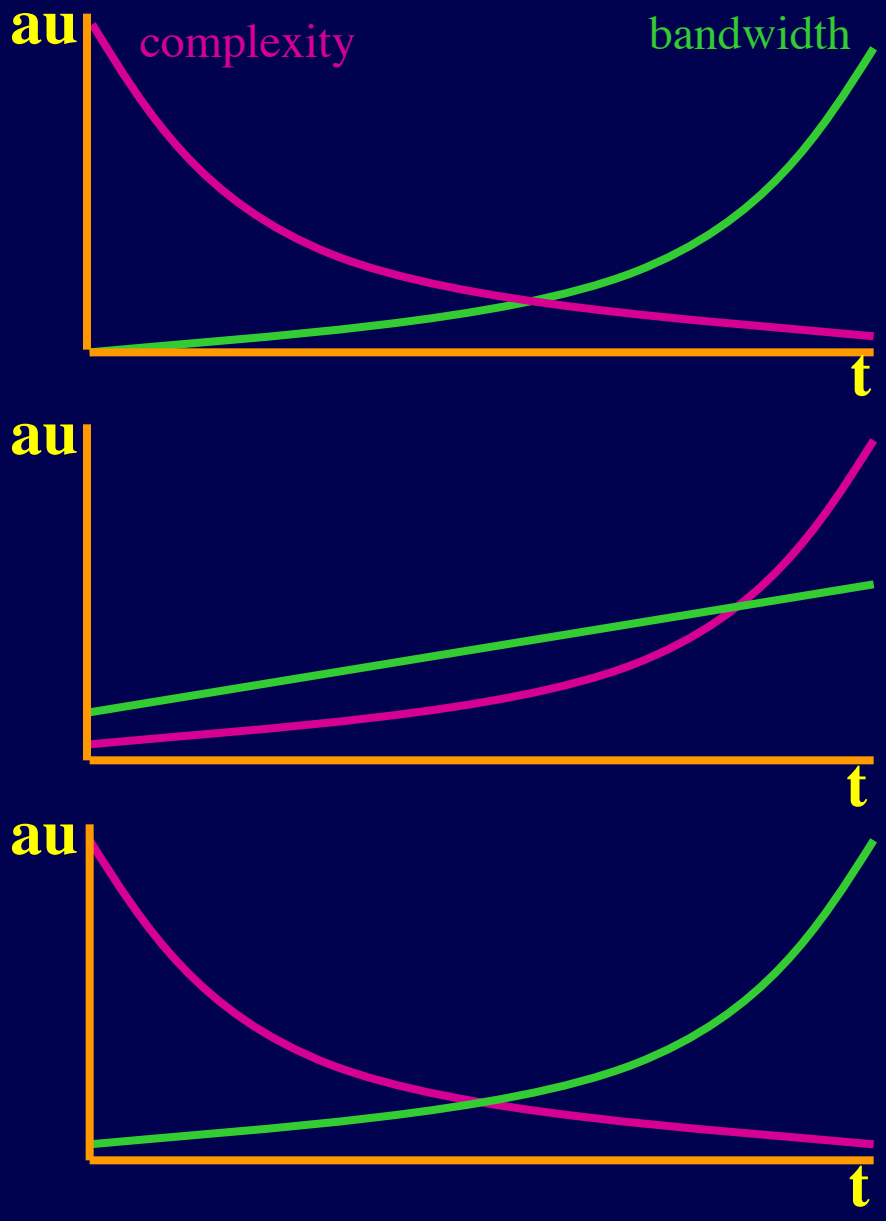
- Resource discovery <-> AAA discovery
- Is AAA high or low in middleware?
- All A's together or not?
- Should AAA be visible in the app or only stay in middleware and this way solve its user interface problem



# Stretching the OSI model





## Specific goals of the RG are:

- develop generic AAA model by specifically including Authentication and Accounting
- develop audibility framework specification that allows the AAA system functions to be checked in a multi-organization environment
- develop a model that supports management of a "mesh" of interconnected AAA Servers
- define distributed policy framework, coordinate with policy framework WG and others
- develop an accounting model that allows authorization to define the type of accounting processing required for each session

## Specific goals of the RG are:

- implement a simulation model that allows experimentation with the the proposed architectural models (also work on an emulation)
- describe interdomain issues using generic model
- work with AAA WG to align short term AAA protocol requirements with long term requirements as much as possible
- complete the work in Q4 - 2000 (ambitious)
- RFC 2903 - 2907 !!!!

# Research Group - info



- **Research Group Name: AAAARCH - RG**
- **Chair(s)**
  - John Vollbrecht -- jrv@merit.edu
  - Cees de Laat -- delaat@phys.uu.nl
- **Web page**
  - www.irtf.org
  - www.phys.uu.nl/~wwwfi/aaaarch
- **Mailing list(s)**
  - aaaarch@fokus.gmd.de
  - For subscription to the mailing list, send e-mail to
    majordomo@fokus.gmd.de with content of message
    subscribe aaaarch
    end
  - will be archived, retrieval with frames and in plain ascii:
    - » http://www.fokus.gmd.de/glone/research/aaaarch/
    - » http://www.fokus.gmd.de/glone/research/mail-archive/aaaarch-current
    - » ftp://ftp.fokus.gmd.de/pub/glone/mail-archive/aaaarch-current

# Research TF-NGN



- Use European research net as testbed for AAA
- VLL type of service
- Top-down
  - Application
  - Middleware - AAA
  - BB
  - Policy push
  - Diffserv
- Focus on techniques and products
- Concentrate on
- Authentication, aggregation
- Authorisation
- SLA - policy - metering - verification
- Simulation/emulation