AES74 : New Standard for Media Network Directory Requirements
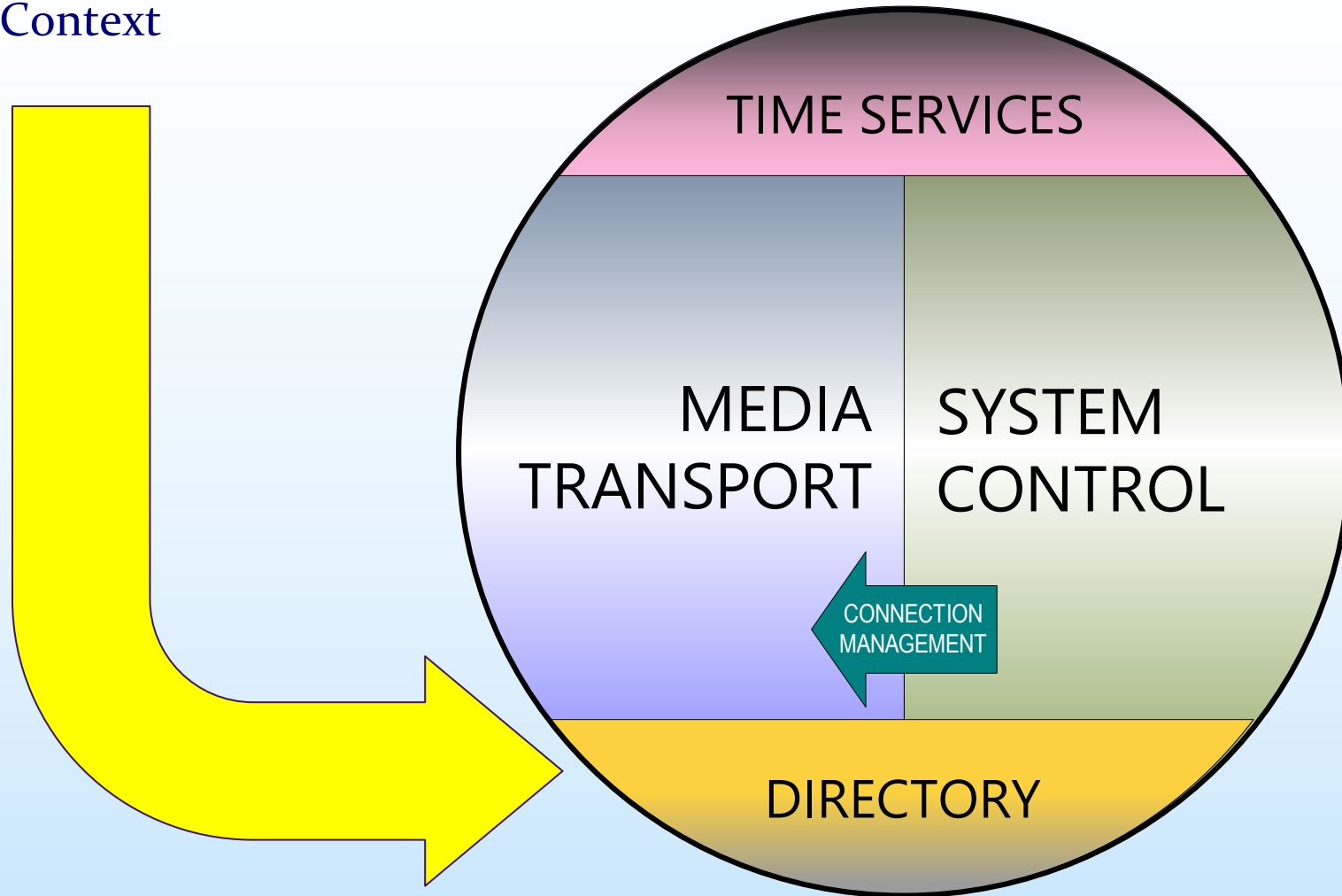
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Chair, AES SC-02-12-N, Open Directory Architecture
Chair, AES SC-02-12-L, AES70
Vice-chair, AES Standards Committee
Chair, OCA Alliance Technical Committee
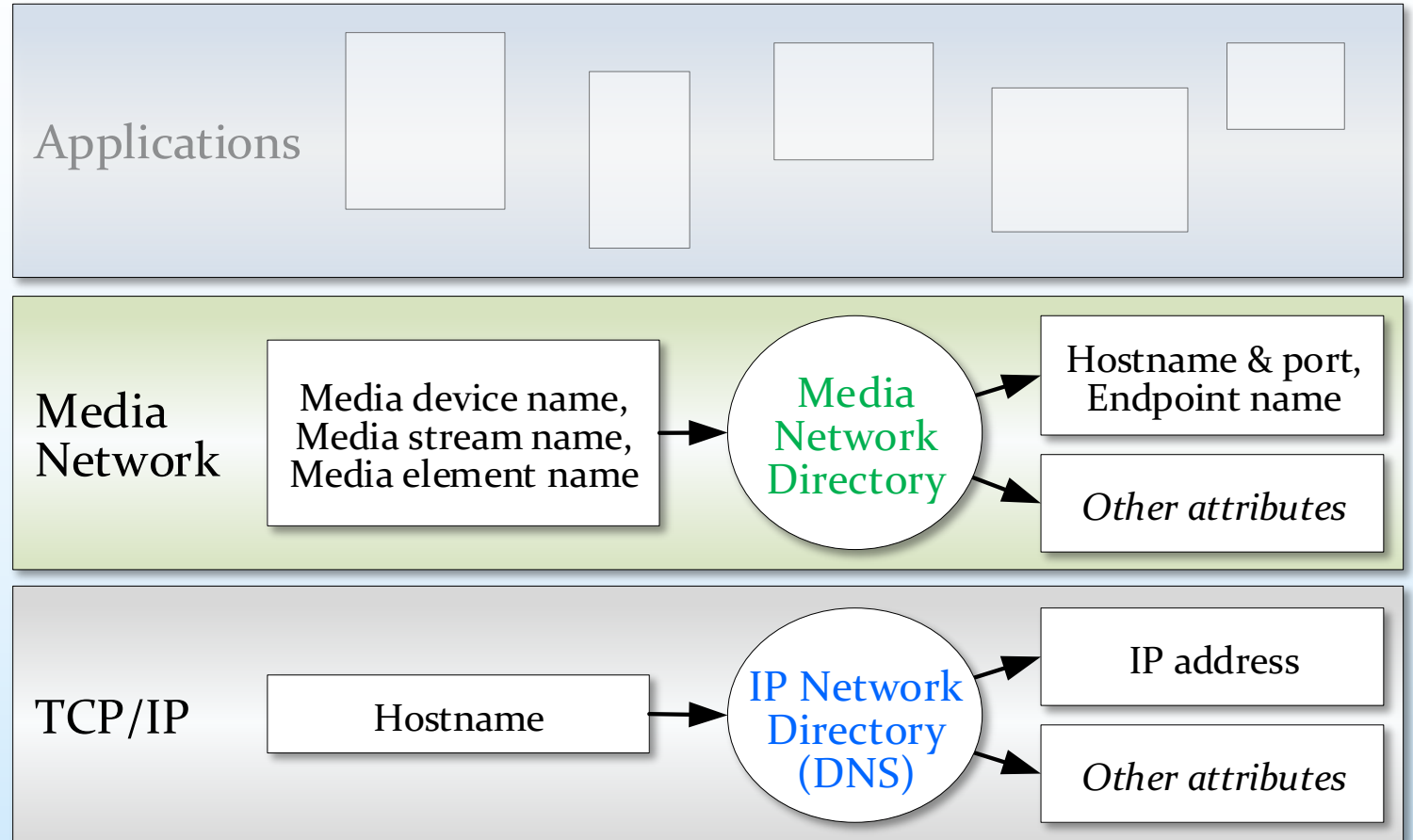
Media Network Directory
In Context

DIRECTORY (adapted from Wikipedia)

A directory is a map between names and values. It allows the lookup of a value given a name, similar to a dictionary.
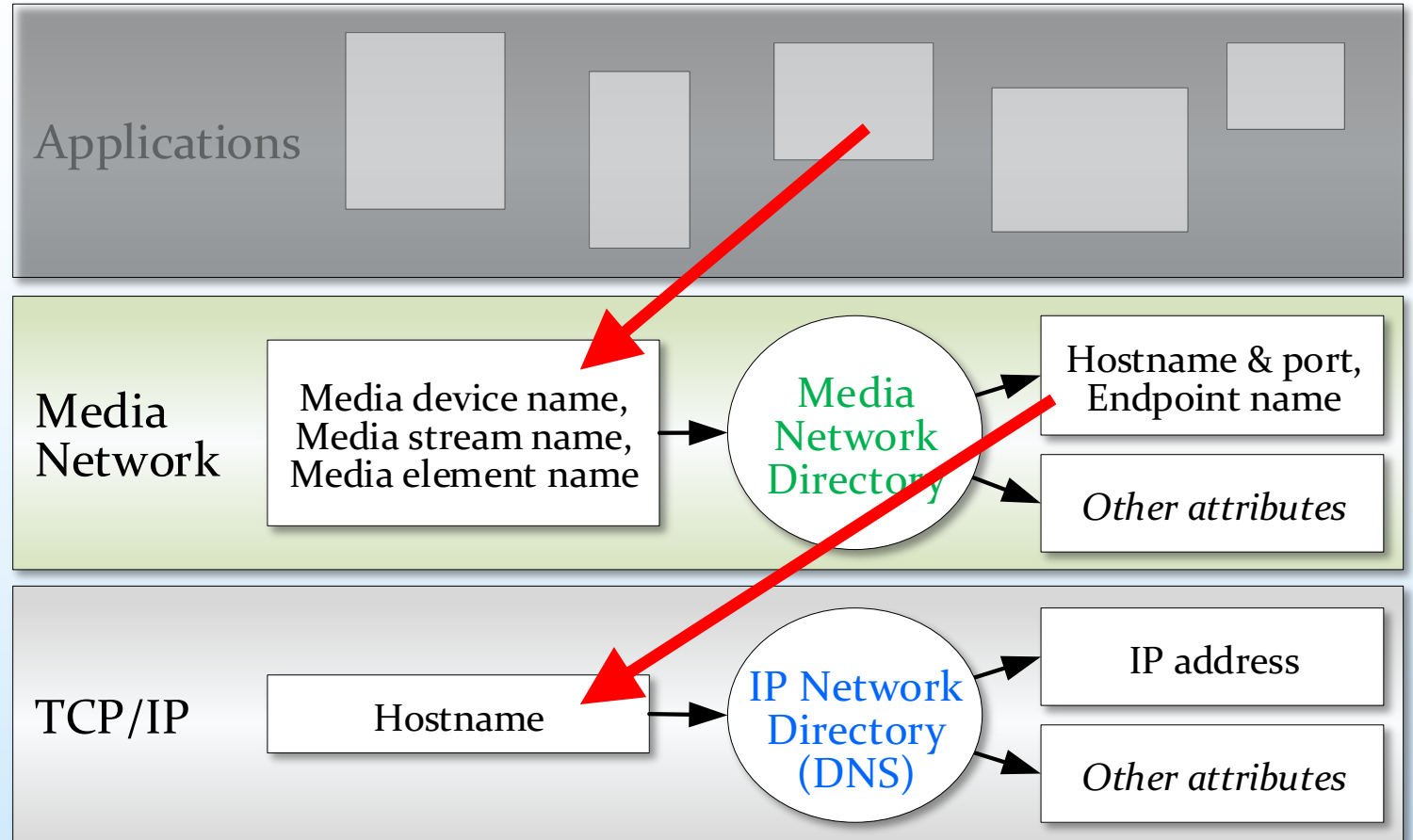
As a word in a dictionary may have multiple definitions, in a directory, a name may be associated with multiple, different pieces of information. Likewise, as a word may have different parts of speech and different definitions, a name in a directory may have many different types of data.

Principle: **A directory is a kind of database**. *Most of the knowledge, language, rules, and practices for databases apply to directories.*

Media Network Directory
vs
IP Network Directory

Applications

Media Network

Media device name,
Media stream name,
Media element name

→ Media Network Directory →

Hostname & port,
Endpoint name

Other attributes

TCP/IP

Hostname

→ IP Network Directory (DNS) →

IP address

Other attributes

Directories in Action:
Name Resolution

What's AES74?

AES74 is a **requirements standard.**

- A requirements standard specifies a desired outcome (*what* is needed).
- It does not specify a way of achieving that outcome (*how* to do it).
  - *Howto* standards are called *implementation standards.*

Examples

- Requirements standard: An automobile must be able to come to a stop whenever desired.
- Implementation standard: An automobile must have a hydraulic braking system.

AES74 is a requirements standard for media network directories.

- It defines a number of terms used for discussing media networks and their directories.
- It specifies the functions media network directories must / should provide.
- It does not define architectures or protocols or programming approaches for providing those functions.

Example of a problem that current directory schemes don't handle well
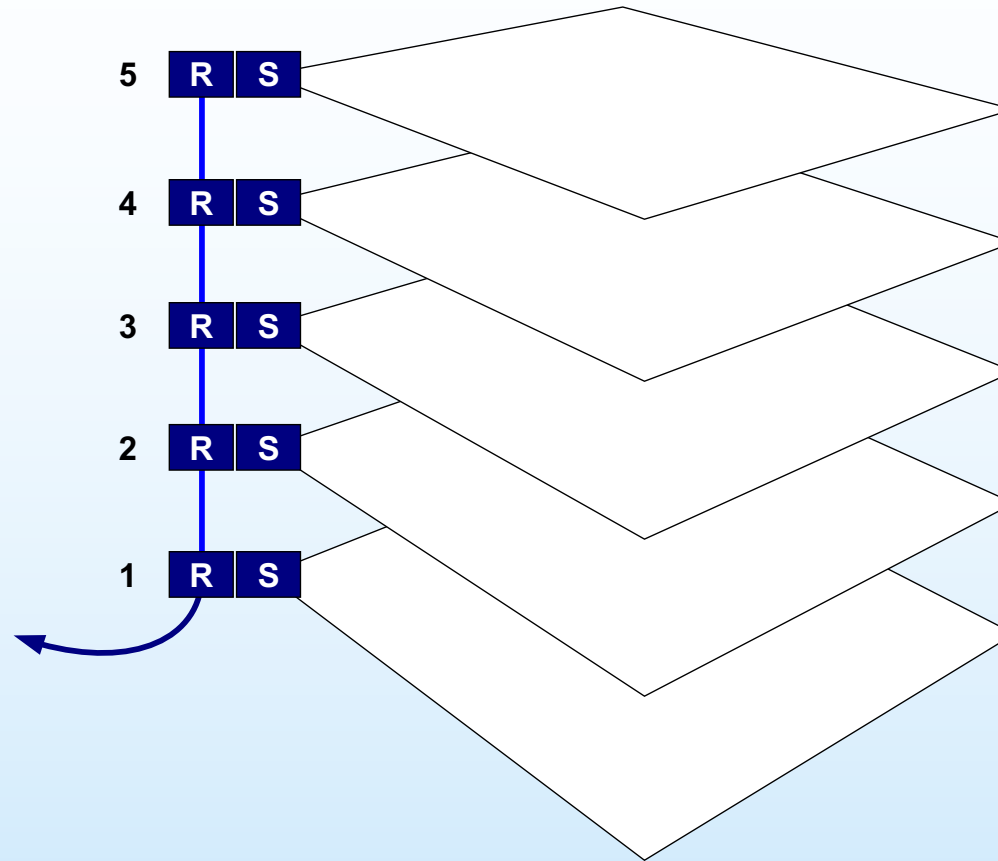
A five-story research building
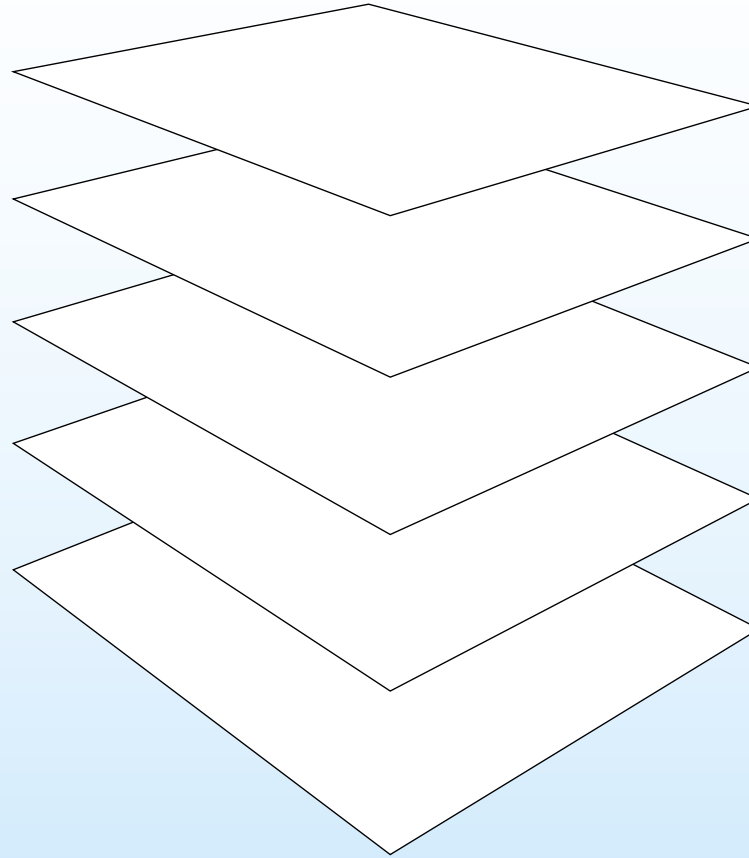
Add an Ethernet
backbone with
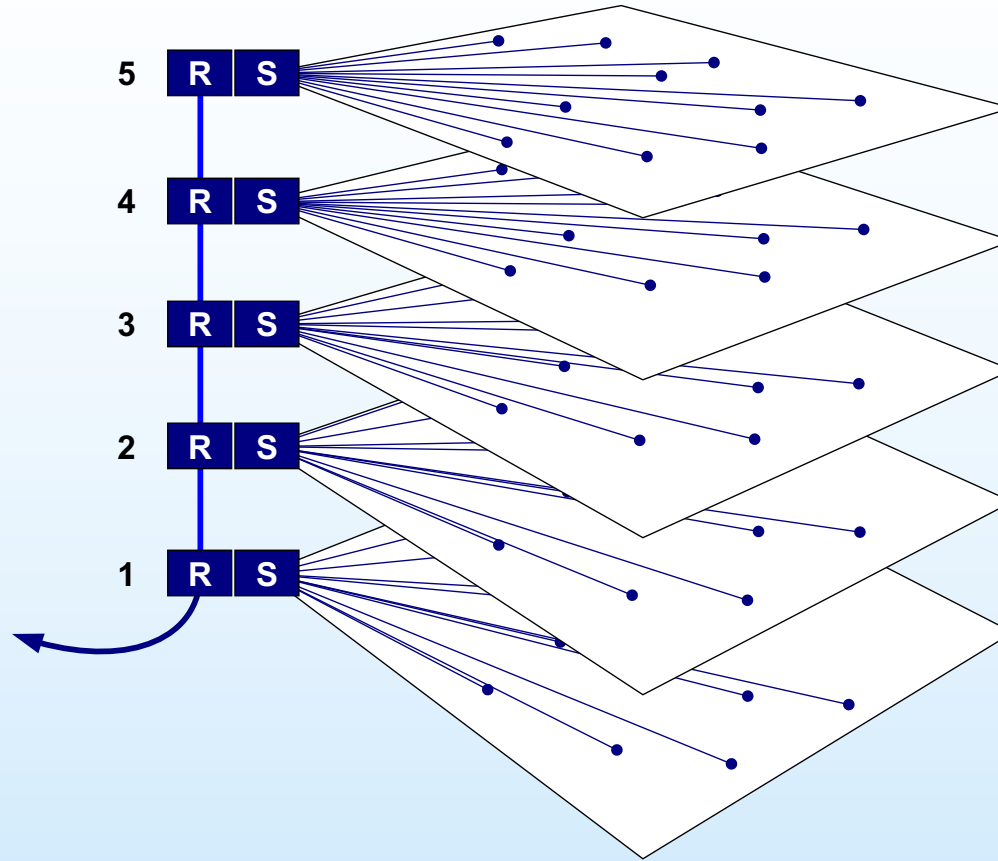routers & switches
on every floor

5 | **R** | **S**

4 | **R** | **S**

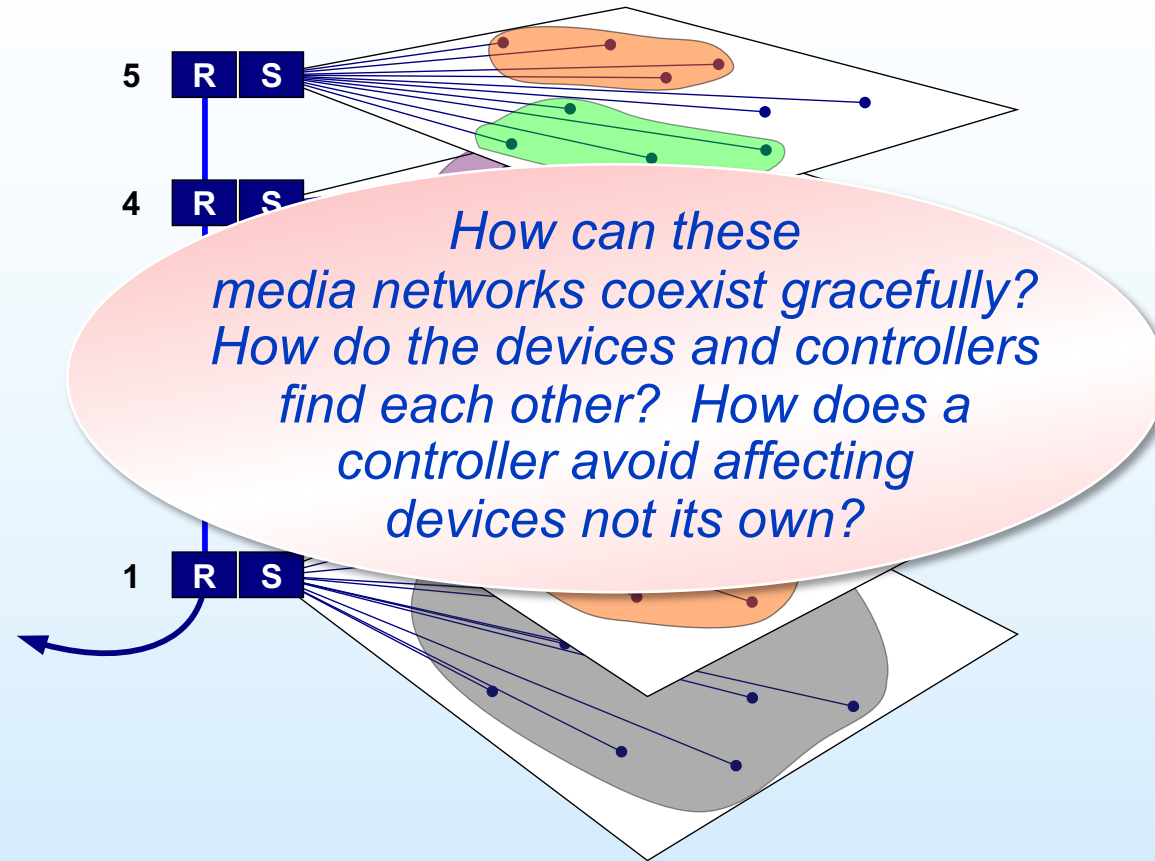3 | **R** | **S**

2 | **R** | **S**

1 | **R** | **S**

Add some nodes to each floor's subnet

Add some research groups, each with its own media network, with some groups spread over several floors

The problem

5 | R | S

4 | R | S

1 | R | S

How can these media networks coexist gracefully? How do the devices and controllers find each other? How does a controller avoid affecting devices not its own?
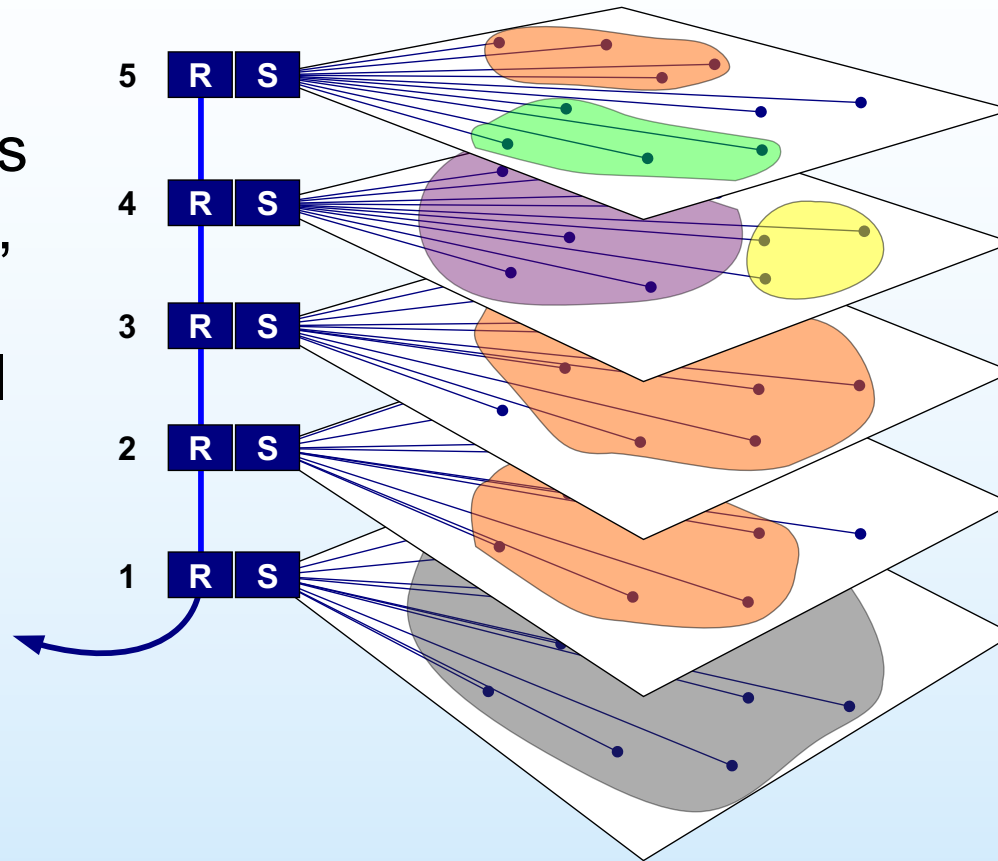
What's in AES74?

- Functionality
    - Registration / deregistration
    - QueryingSubscriptions
    - Persisting queries
    - Discovery

- Directory access
    - Directory services
    - Directory access protocols

- Coexistence of multiple directories

- Nested directories
    - Entity path
    - Name resolution

- Data network considerations
  - Data network type independence
  - Data network topology independence
  - Minimal effect on infrastructure
  - Shared data networks
- Discoverability
- Security and access control
- Scalability
- Performance
- Centralized and distributed implementations
- Reliability and robustness
- Ease of use

Status of AES74 today

Status of AES74 today

- AES74 is currently a draft AES standard in the public comment phase.

- Public comments will be accepted until November 21st.

- A downloadable copy of the draft is here:

  http://www.aes.org/standards/blog/2019/10/call-for-comment-on-draft-aes74-xxxx

- When the comment period expires, the responsible AES Standards task group will resolve any comments that have been received.

- When no unresolved comments remain, AES74 will become an official AES standard.

Questions? Ask me

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THANKS