

Requirements for accessing data in network storage

draft-ohlman-decade-add-use-cases-reqs-02

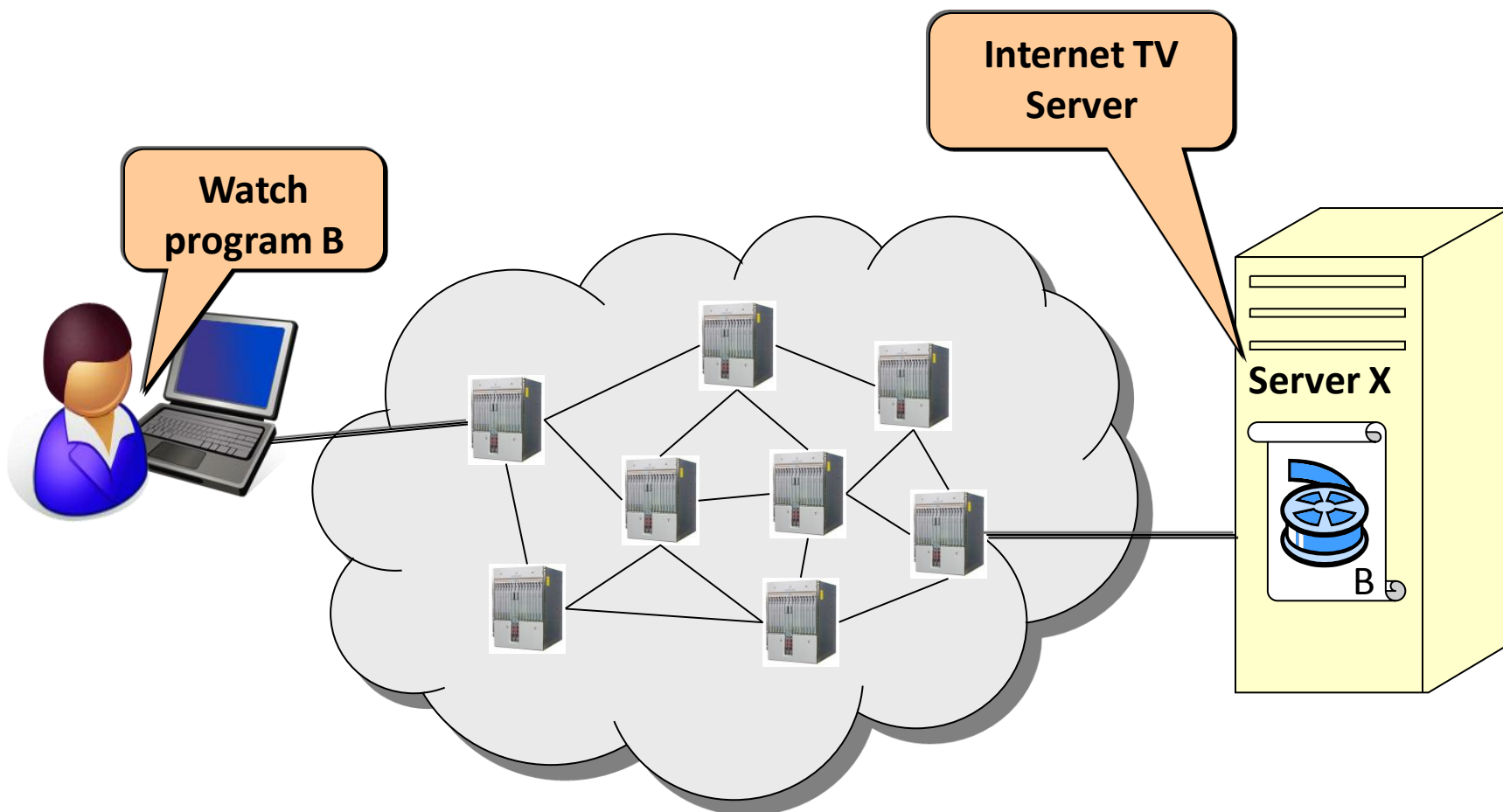
Börje Ohlman
Ove Strandberg
& SAIL WPB colleagues

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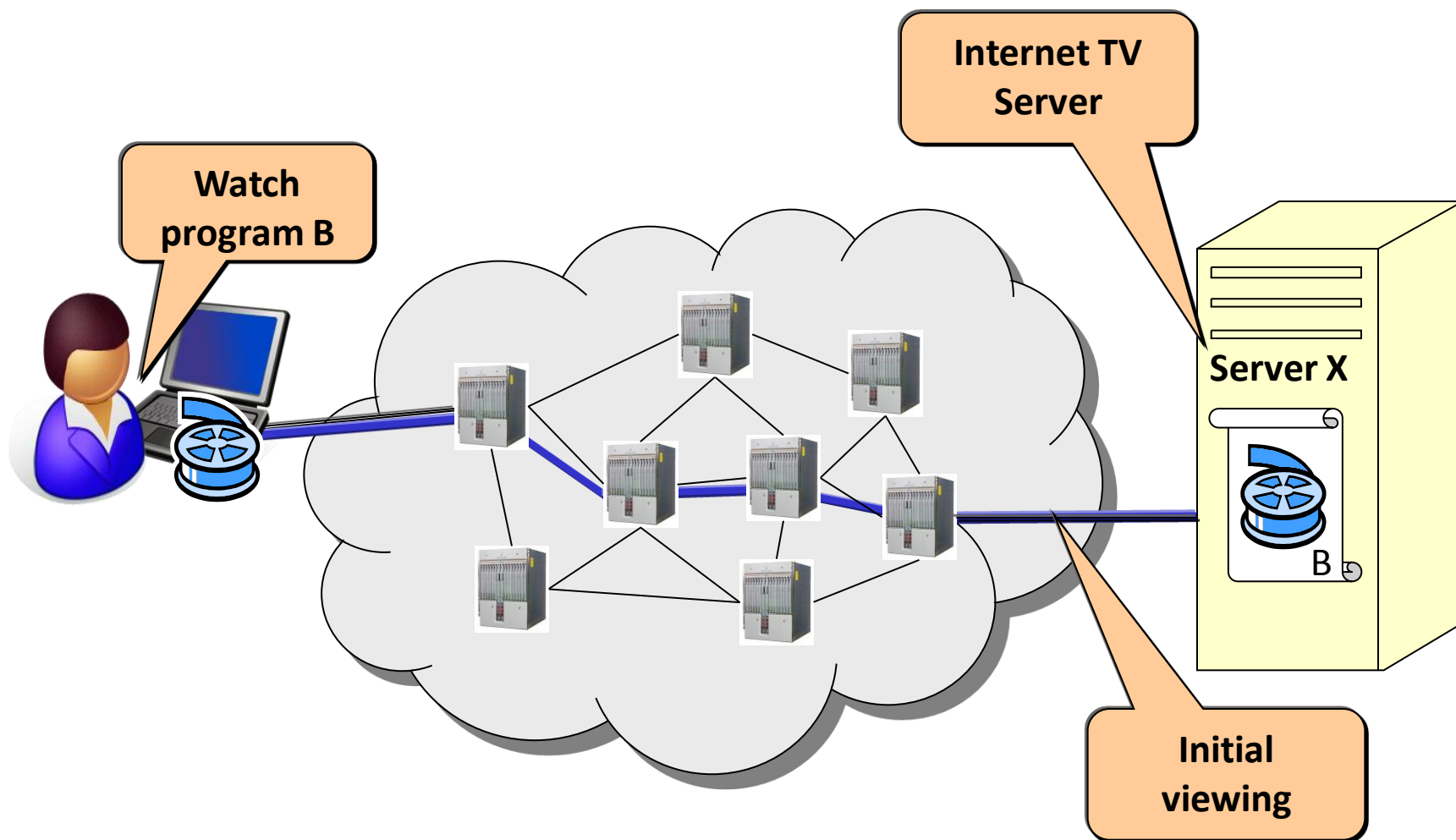


- ❖ Additional requirements to complement “draft-ietf-decade-reqs-00”
- ❖ Additional use case Internet TV
- ❖ Requirements:
 - Unique Naming of Information Objects
 - Access to Information Objects **Covered by 4.1.3.2. Access by Other Users**
 - Real-time Support **Covered by 5.1.4. Reading before completely written
4.1.2. Transfer and Latency Requirements**
 - Discovery service for DECADE in-network storage
 - Multiple active DECADE Storage Servers

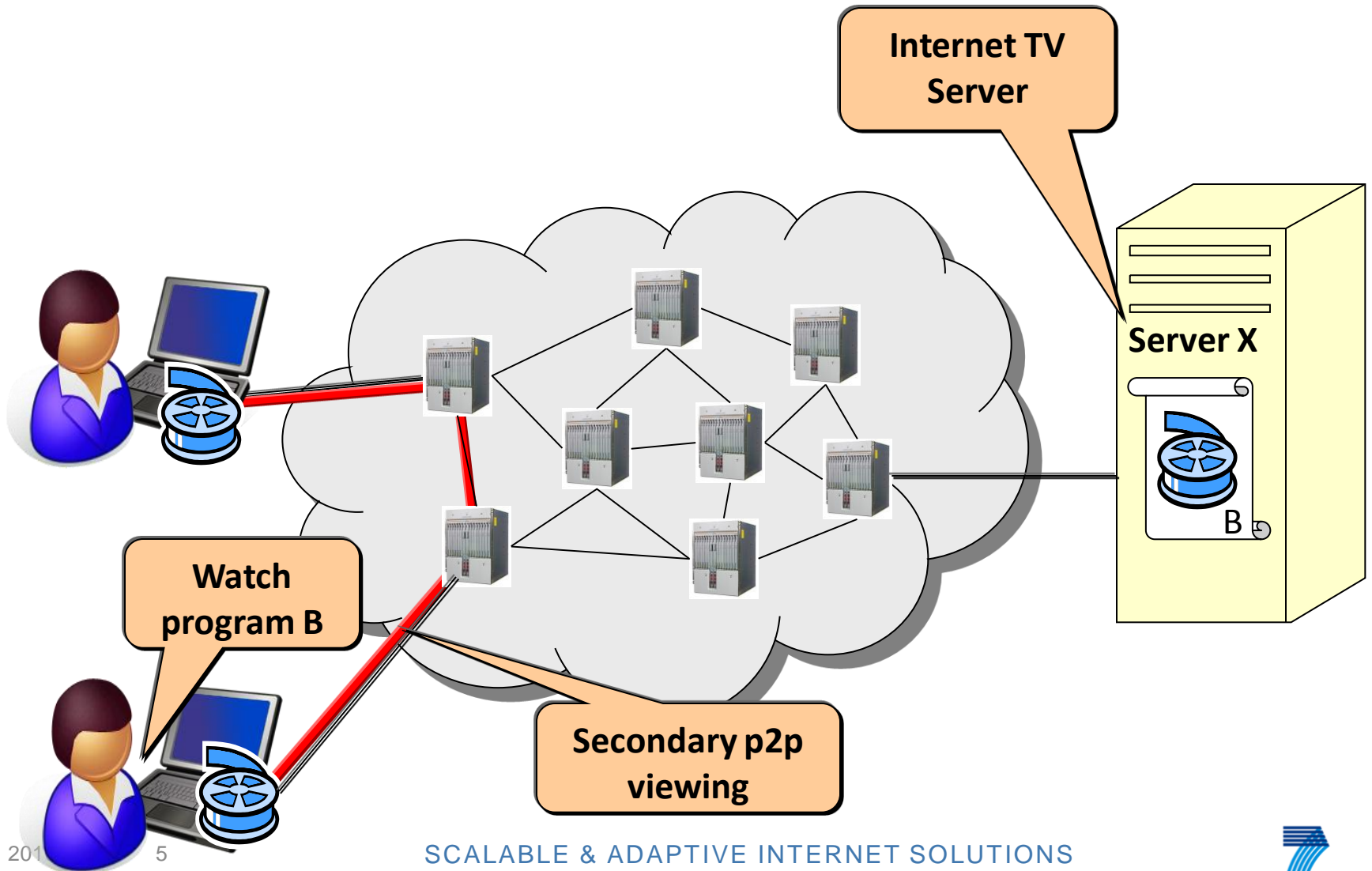
Internet TV Scenario



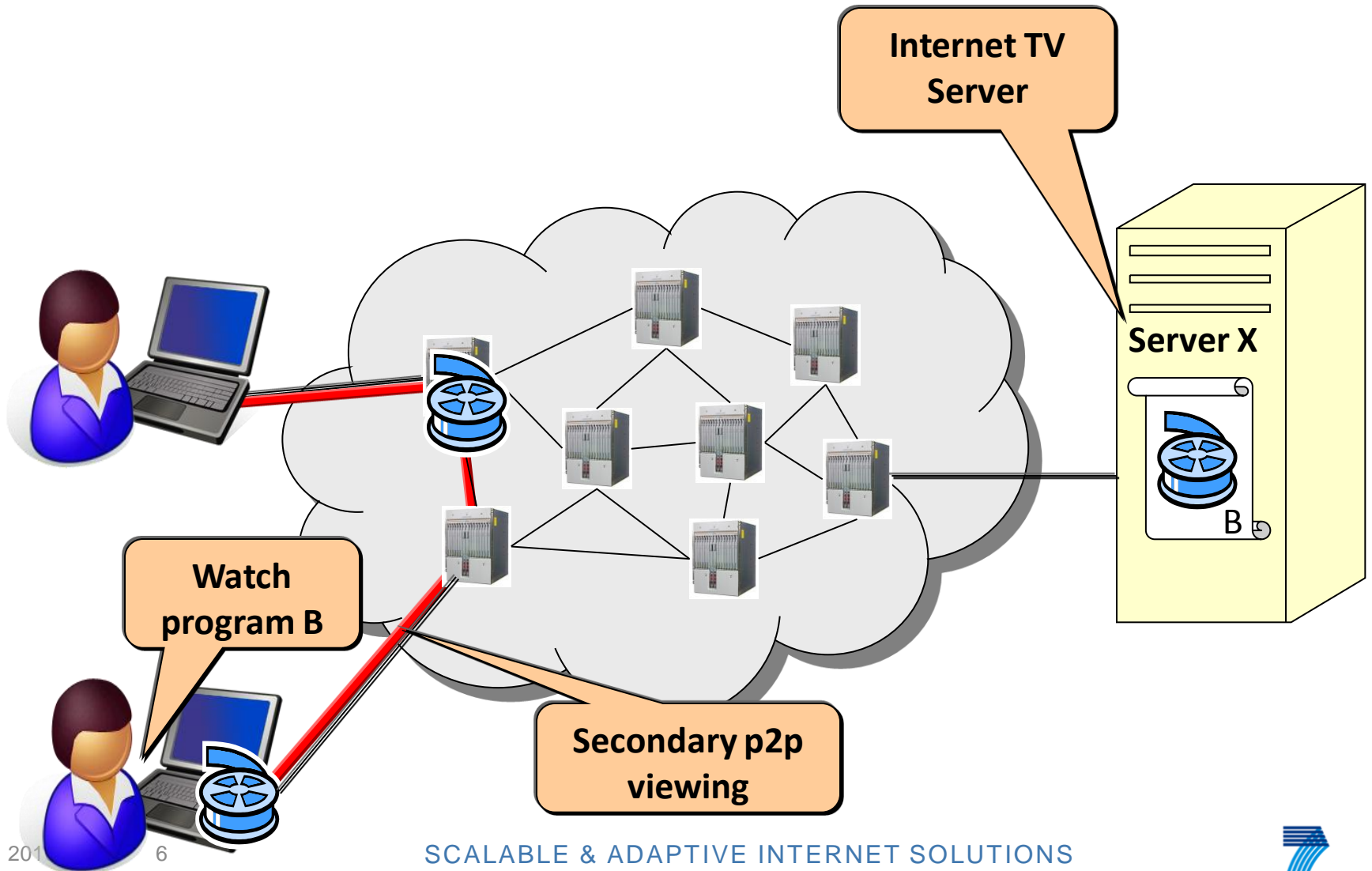
Internet TV Scenario



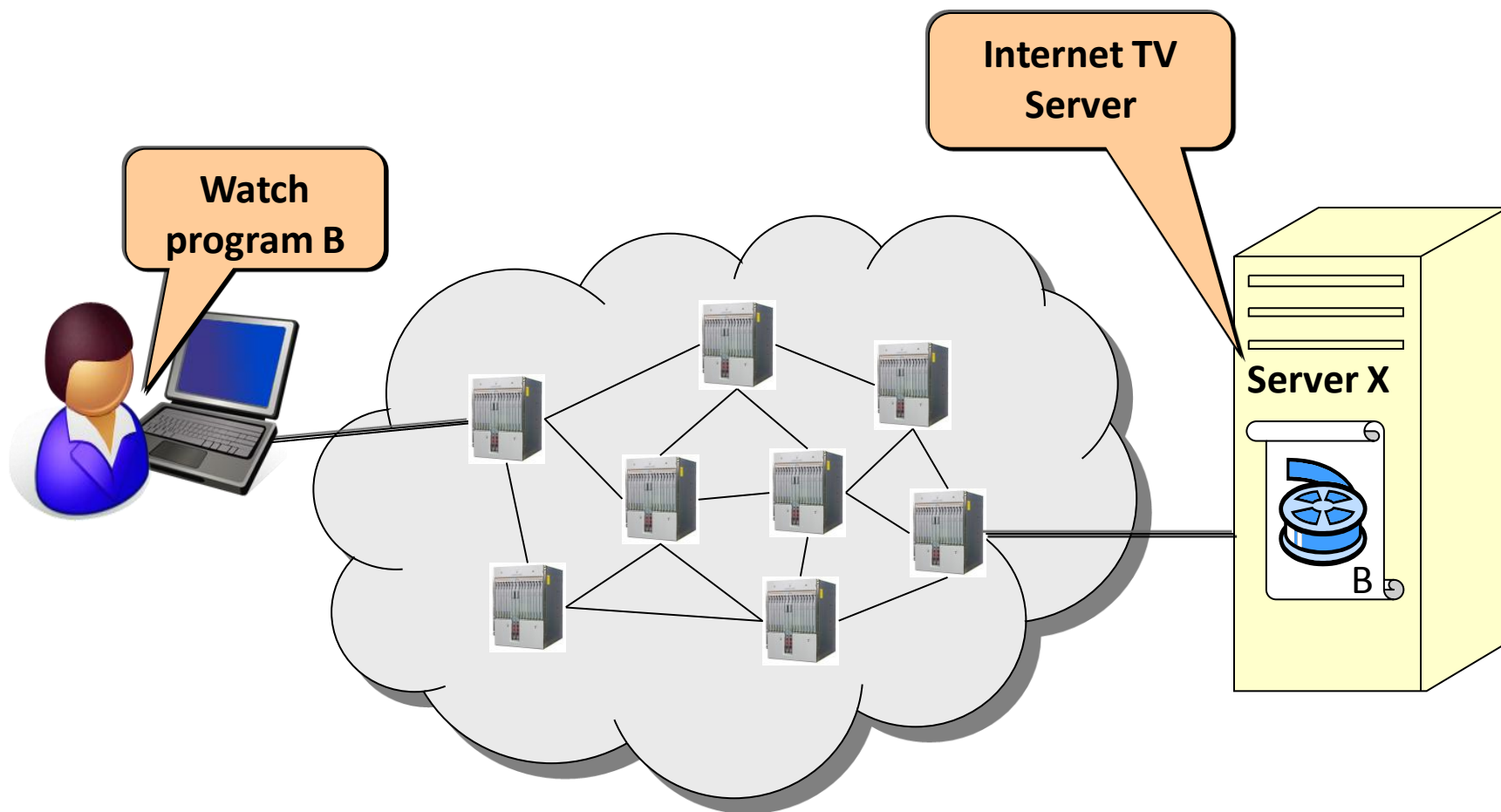
Internet TV Scenario



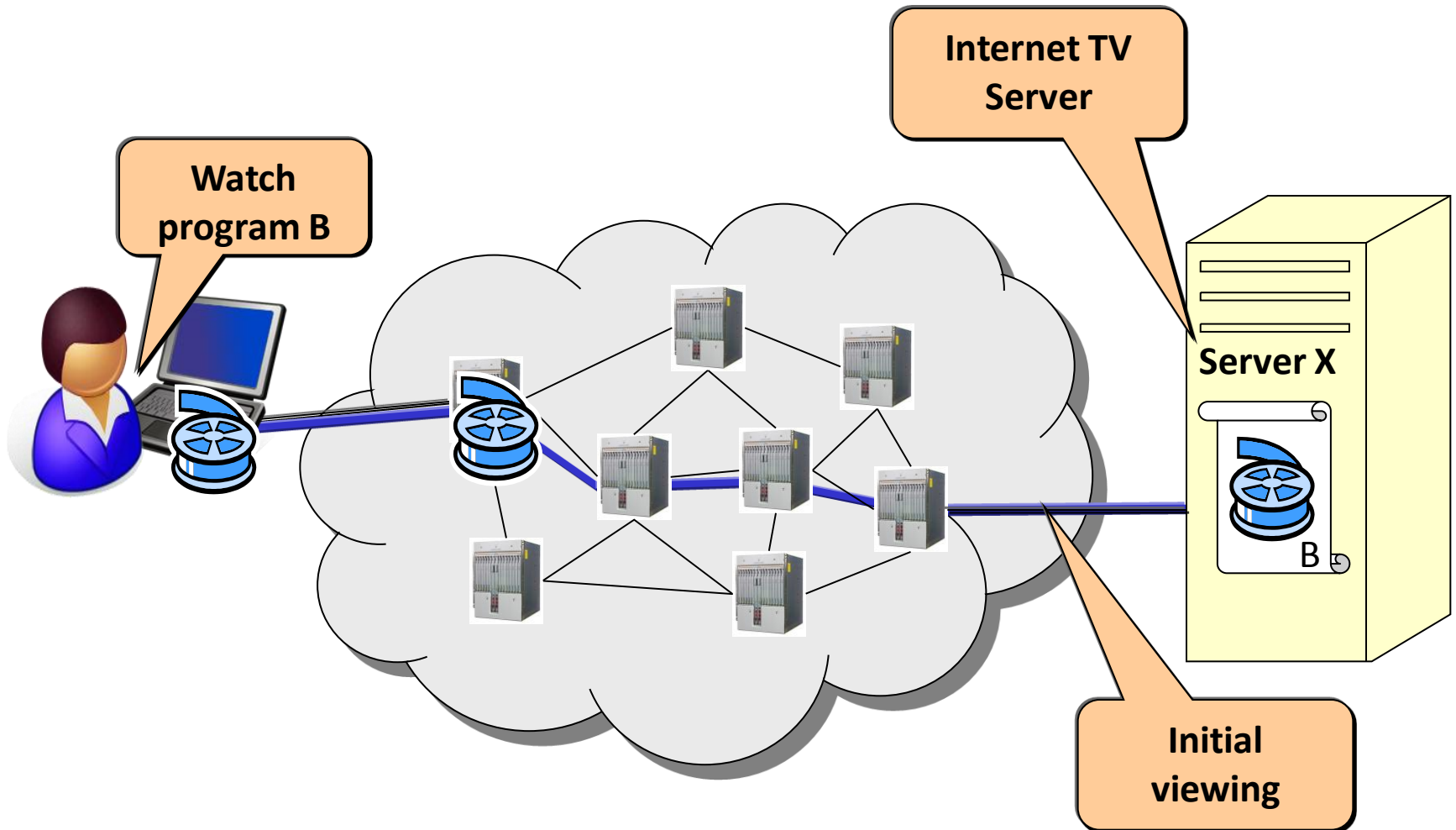
Internet TV Scenario



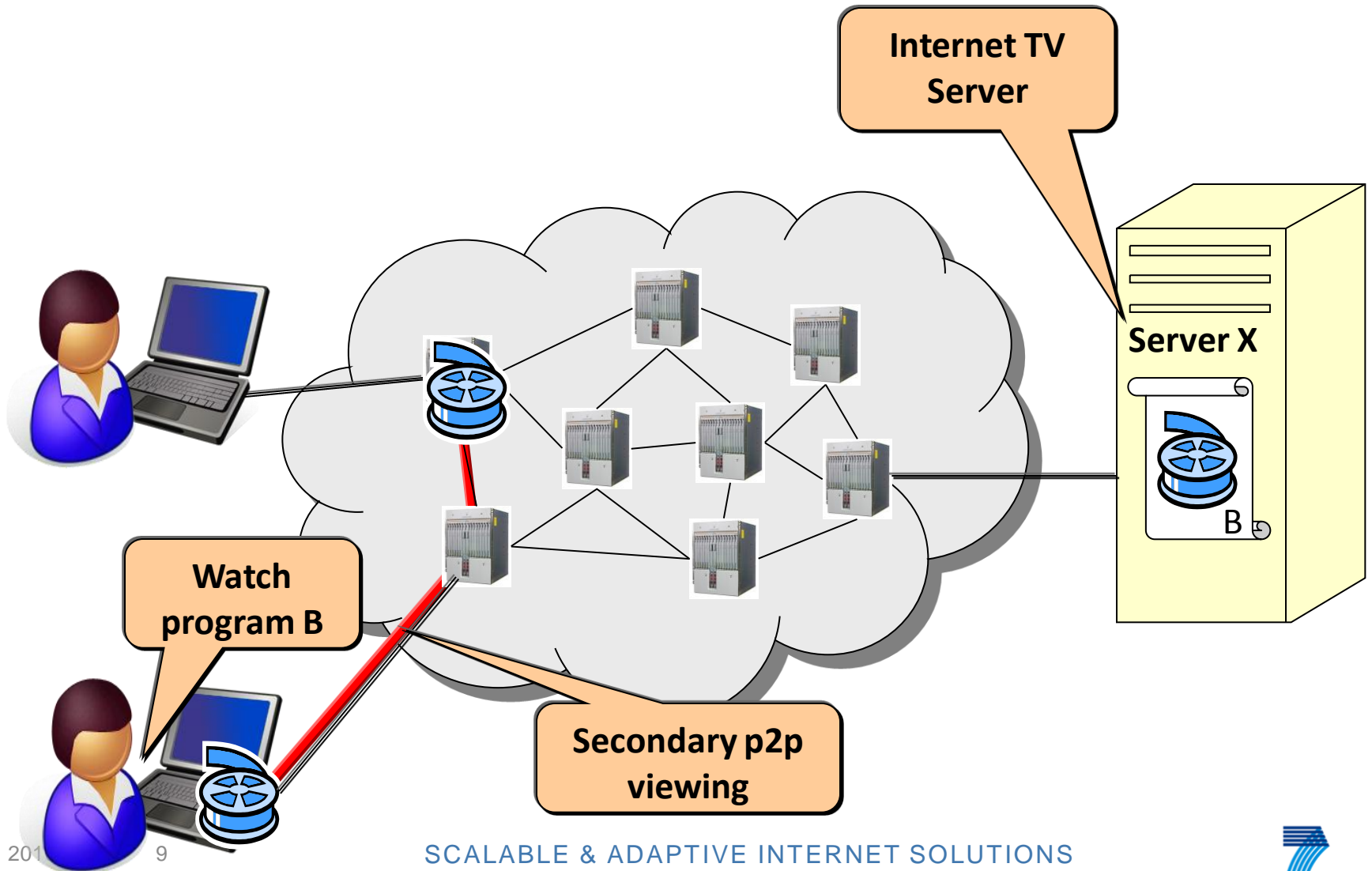
Internet TV Scenario



Internet TV Scenario



Internet TV Scenario



Requirement: Unique Naming of Information Objects



- ❖ When a DECADE client in a certain application context stores an information object in DECADE storage servers, the object **MUST** be addressable by a unique name across different application contexts.
- ❖ Rationale
 - There is a need for unique naming to enable different application instances to refer to information objects using a name (that may have been provided to them by another DECADE client). Such unique naming is essential for efficient cache handling and can serve for de-duplication.

Requirement: Access to Information Objects



- ❖ It MUST be possible to access data stored on D5 storage servers as complete information objects, such as a named video file

❖ Rationale

- In a video-on-demand streaming use case, the client application should be enabled to retrieve the complete object in one transaction and should not be required to download individual chunks

Covered by 4.1.3.2. Access by Other Users

Requirement: Real-time Support



- ❖ The DECADE storage service **MUST** support real-time applications in a way that a resource that is being uploaded is already available for download

- ❖ Rationale

- For larger objects or chunks, it is not acceptable if a DECADE client has to upload the complete resource first, before other clients can start downloading it

Covered by
5.1.4. Reading before completely written
4.1.2. Transfer and Latency Requirements

Requirement: Discovery service for DECADE in-network storage



- ❖ When a DECADE client attach to a DECADE enabled network there SHOULD be a discovery service that can tell a DECADE client where in-network storage servers can be found .
- ❖ Rationale
 - To minimize manual configuration of the DECADE clients, a discovery service, similar to DHCP , should be provided in the DECADE enabled network

Requirement: Multiple active DECADE Storage Servers



- ❖ DECADE client SHOULD be able to use multiple in-network storage servers at the same time
- ❖ Rationale
 - One example of when this is needed is when a user/client roams to another network, then it is reasonable to assume that the currently used in-network storage remains active for a certain time not to disrupt ongoing communication sessions at the same time as another in-network storage might immediately be needed in the new network

Summary and Conclusion



- ❖ Internet TV use case
 - ❖ Additional requirements
 - Unique Naming of Information Objects
 - Access to Information Objects **Covered by 4.1.3.2. Access by Other Users**
 - Real-time Support **Covered by 5.1.4. Reading before completely written
4.1.2. Transfer and Latency Requirements**
 - Discovery service for DECADE in-network storage
 - Multiple active DECADE Storage Servers
 - ❖ Adopt requirements into “draft-ietf-decade-reqs-00”
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- ❖ Information on the related naming concept from Networking of Information (NetInf)
 - <http://www.netinf.org>
 - <http://www.4ward-project.eu/>
 - <http://www.sail-project.eu/>