



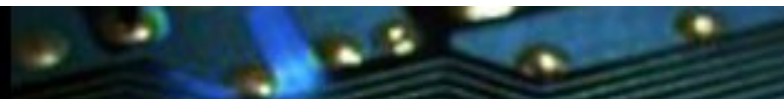
BBC Production Gateway

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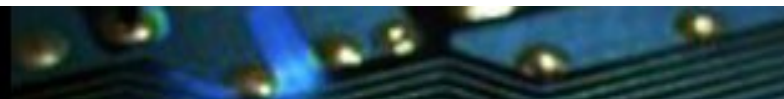
Introduction – Tapes and files in the BBC

- The way in which the BBC currently works with external Post Production facilities has logistics down to a fine art
- Thousands of tapes, floppy disks, couriers and taxis move around with a generally high success rate
- Fast network technologies, file-based acquisition and media asset management systems are increasingly common place
- The BBC needs to understand the tangible business benefits and solution required to enable the digital exchange of content with internal and external partners.



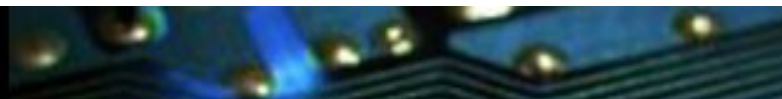
Context – Networks and media files

- File based working, and networks to support file based working, are common within organisations
- Using standard Information Technology (IT) infrastructure and protocols to view and download 'browse' material between organisations is also common
- Cost effective use of standard IT infrastructure and protocols to move large files between organisations remains a major challenge
- IT continues to increase in capability and decrease in price encouraging the search for benefits from 'convergence'

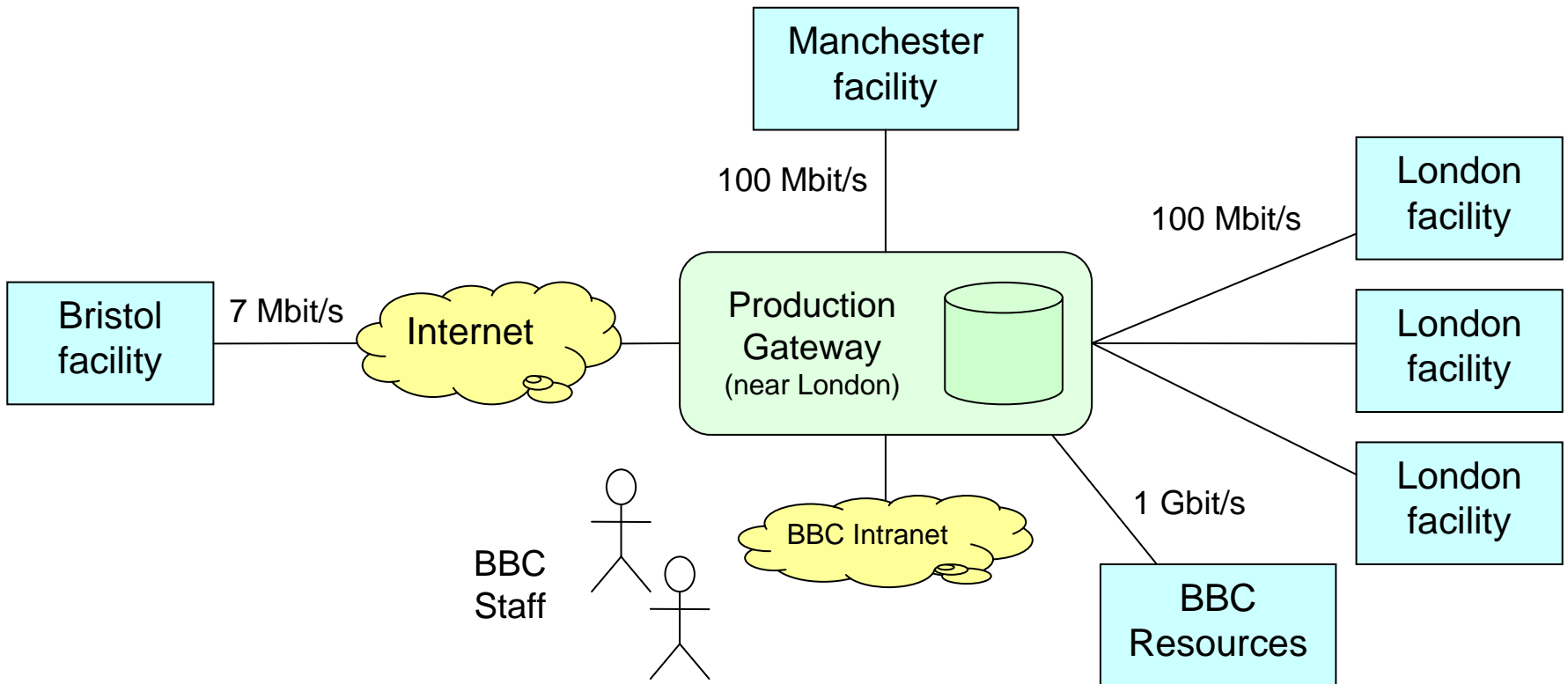


BBC Production Gateway Project

- Aims to clarify the benefits, costs and risks of file-based exchange with BBC's production partners, and to identify workable business models
- Provides post houses with a Java application for FTP transfer of media files to and from Production Gateway server
- Uses features of the Media Dispatch Protocol (MDP) to orchestrate transfers
- Has implemented a set of network links between the BBC and six geographically-spread Post Production facilities, with bandwidth capacity of between 7Mbps and 1Gbps
- Is part-way through a six-month pilot; it has completed a two-month Technical Trial to prove the above infrastructure and is now in the middle of a four-month Operational Trial

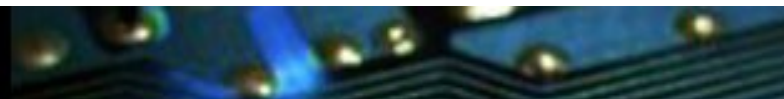


BBC Production Gateway Technical Trial



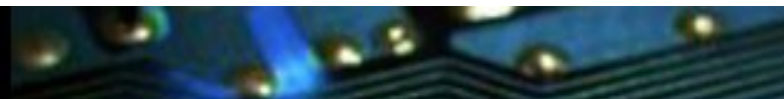
Issues from the technical trial

- The performance overhead of using Java for the processing of large volumes of data
- Optimising hardware and network configuration for throughput with high bandwidth applications
- Not all the functionality of the MDP was implemented for this tactical build and more functionality is becoming available as development continues
- Firewalls and security - developing best practice

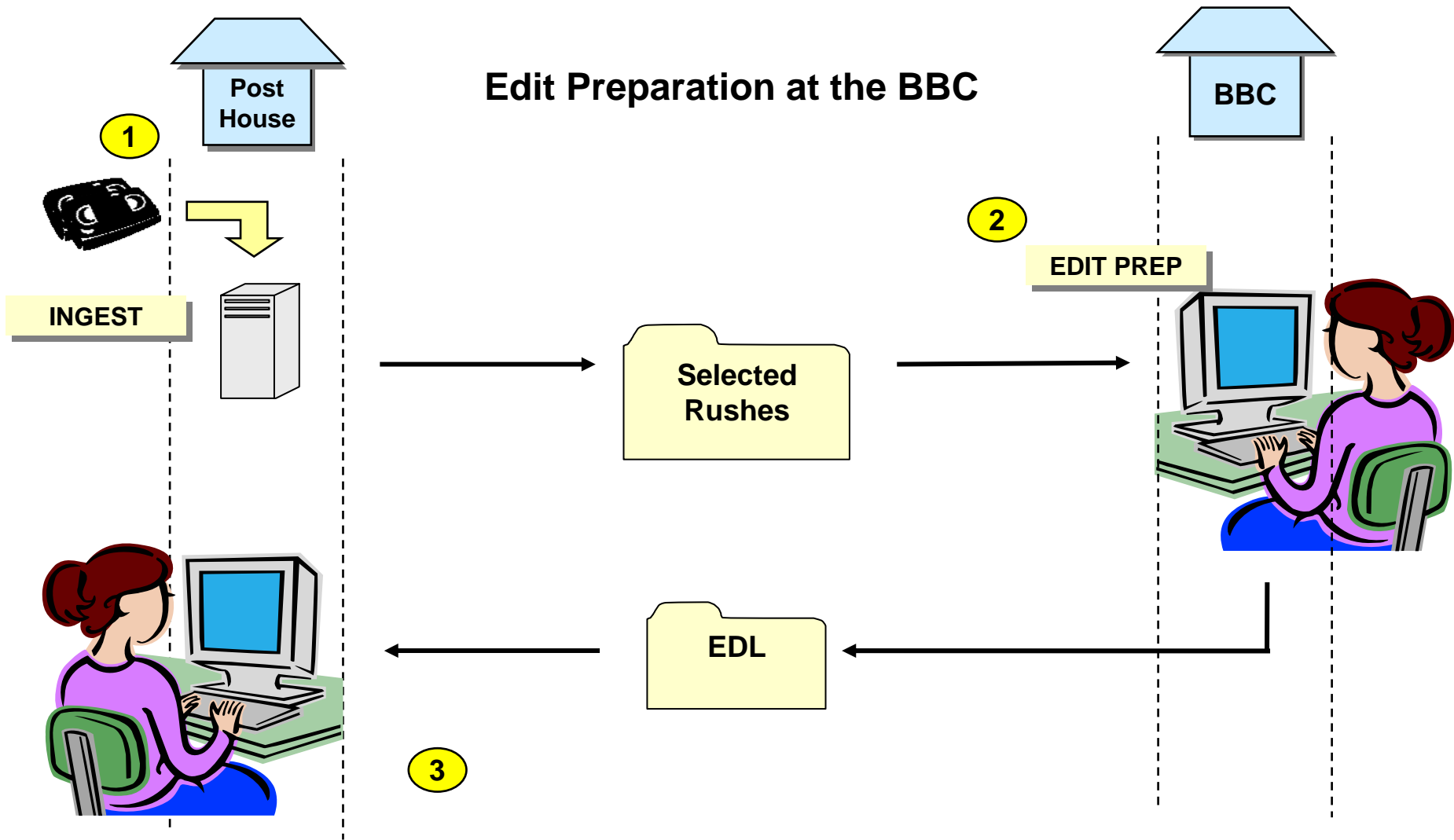


The operational trial

- Is engaging with BBC productions to develop and document detailed process steps and business requirements for asset exchange
- Will demonstrate and capture learning from real-world use of Gateway
- Will look at new commercial models for digital asset exchange with the Post Production participants
- Aims to produce an overall roadmap, high-level future solution and cost benefit risk case for a full-scale BBC-wide Production Gateway
- Is focusing on several workflows

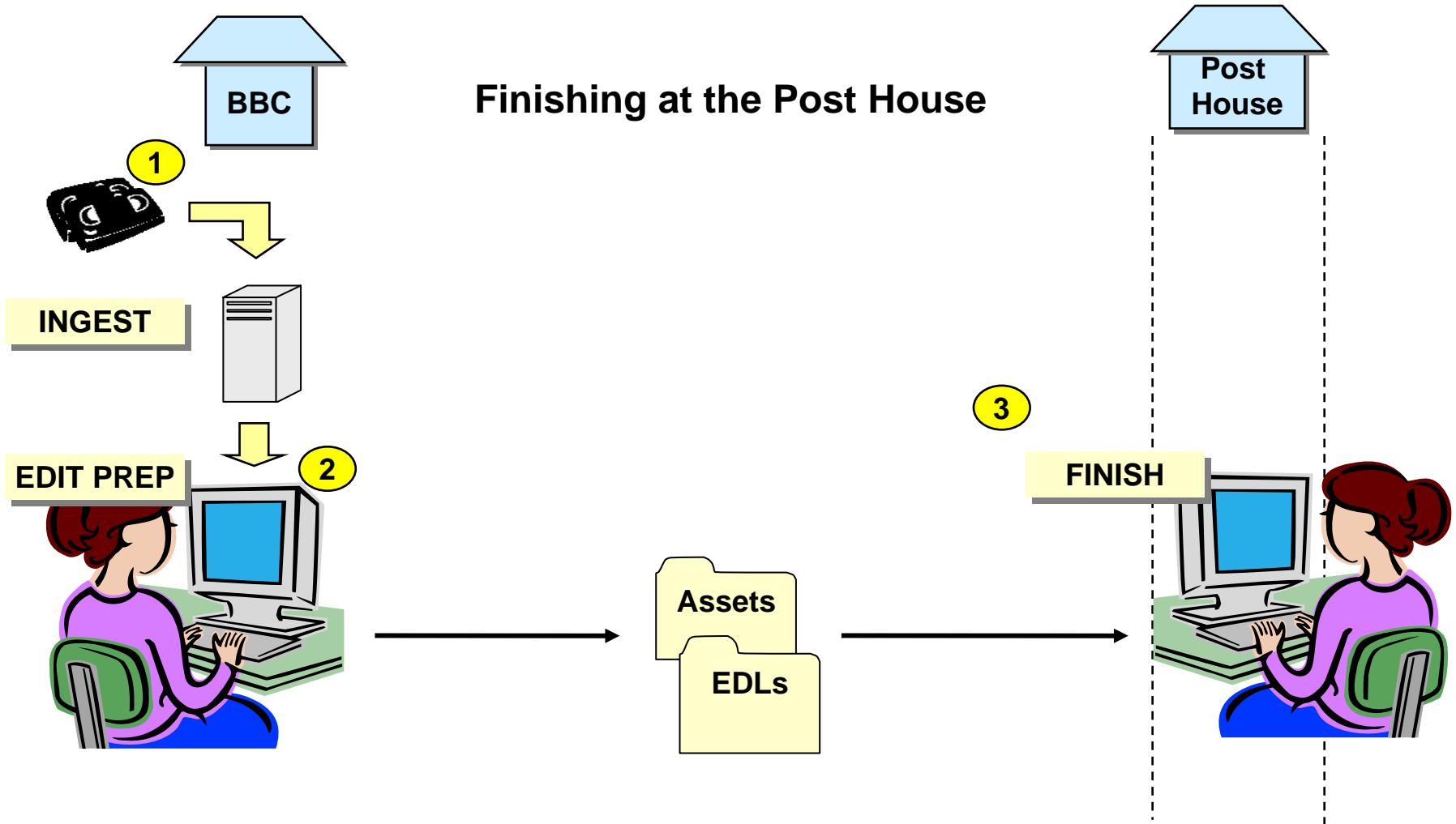


Post-production workflows with large files 1

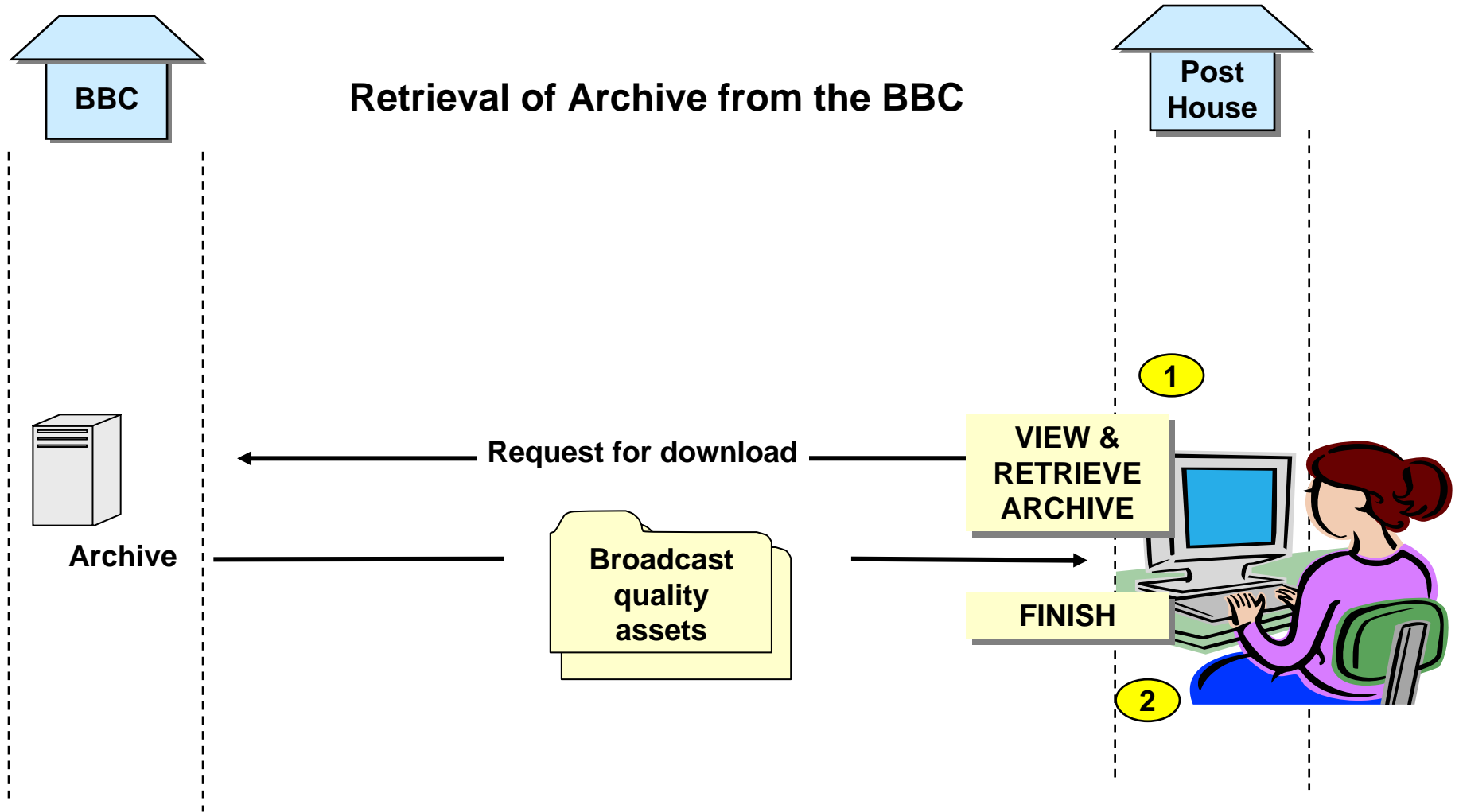


Post-production workflows with large files 2

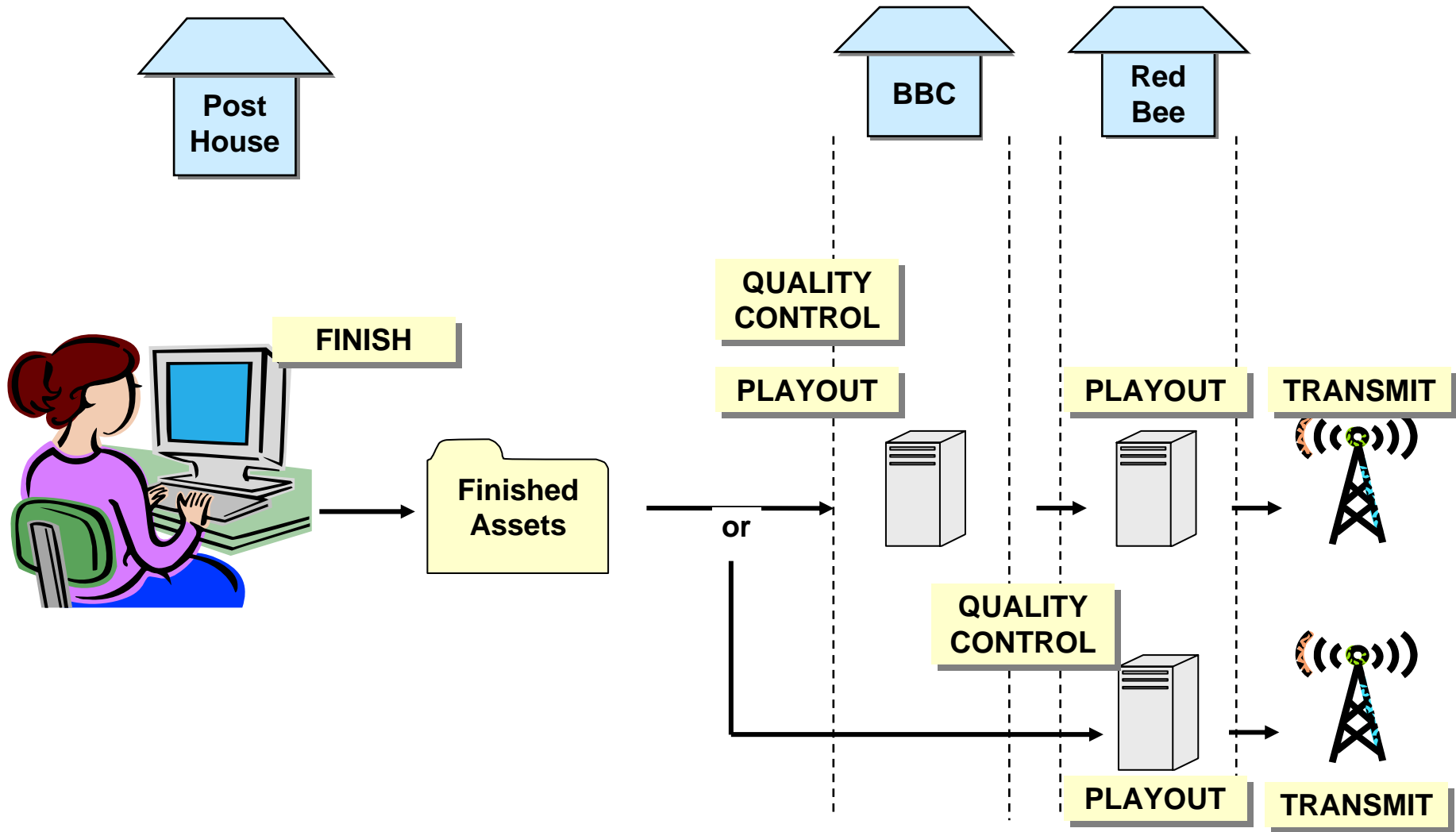
Finishing at the Post House



Post-production workflows with large files 3

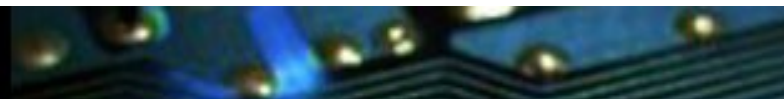


Delivering large files from post-production

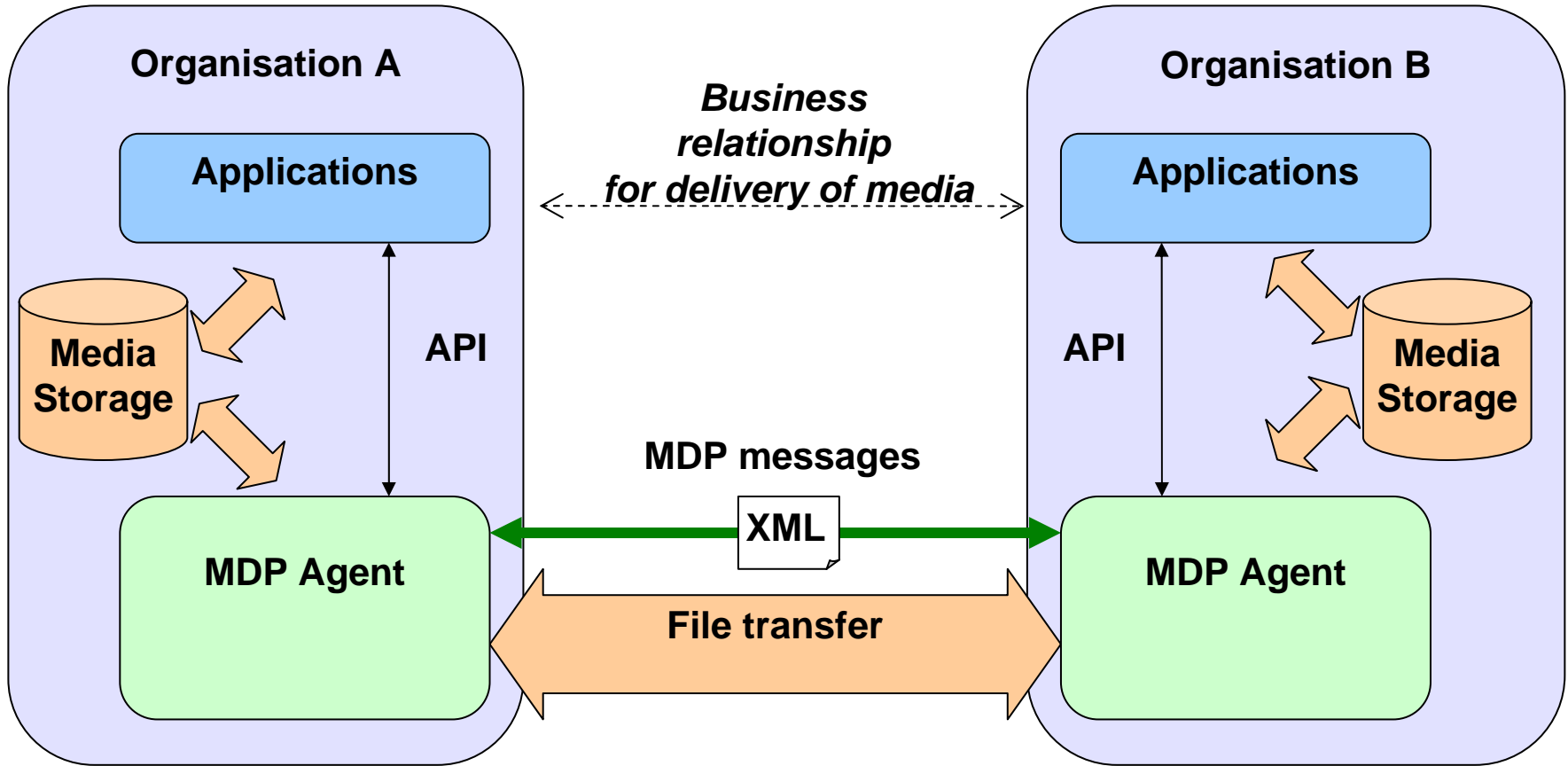


What is the role of the Media Dispatch Protocol?

- Allow organisations to exchange media content in a way that is:
 - Secure and reliable
 - Capable of being automated
 - Open and non-proprietary
- Avoid chaos where companies all 'do their own thing' for delivery
- Organisations run software called MDP Agents which talk to each other in a well-defined way
 - Analogy: email systems talk via a standard protocol (SMTP)
- Agents agree on what files to send, how and when, and manage and monitor the transfers
 - XML "Manifest" document encapsulates the details of a delivery transaction
- Build upon well-known web standards such as HTTPS and XML

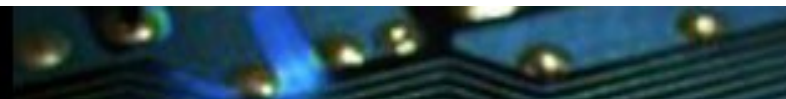


Scope of operation of the Media Dispatch Protocol



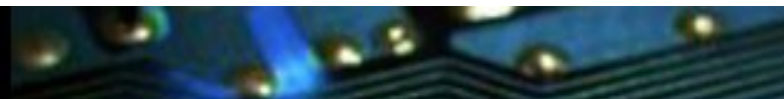
What elements of the MDP remain to be added in future

- **Allow delivery of multiple files in a single transaction** - a key concept of the Manifest
- **Add support for 'pull model' transfers** - with current implementation post houses must push content to BBC
- **Implement MDP security measures**
 - use encrypted protocols
 - authenticate both parties
 - perform integrity check on received media
- **Support requests to pause/resume or abort transfers**
- **Provide MDP completion message** - equivalent of signing a delivery note

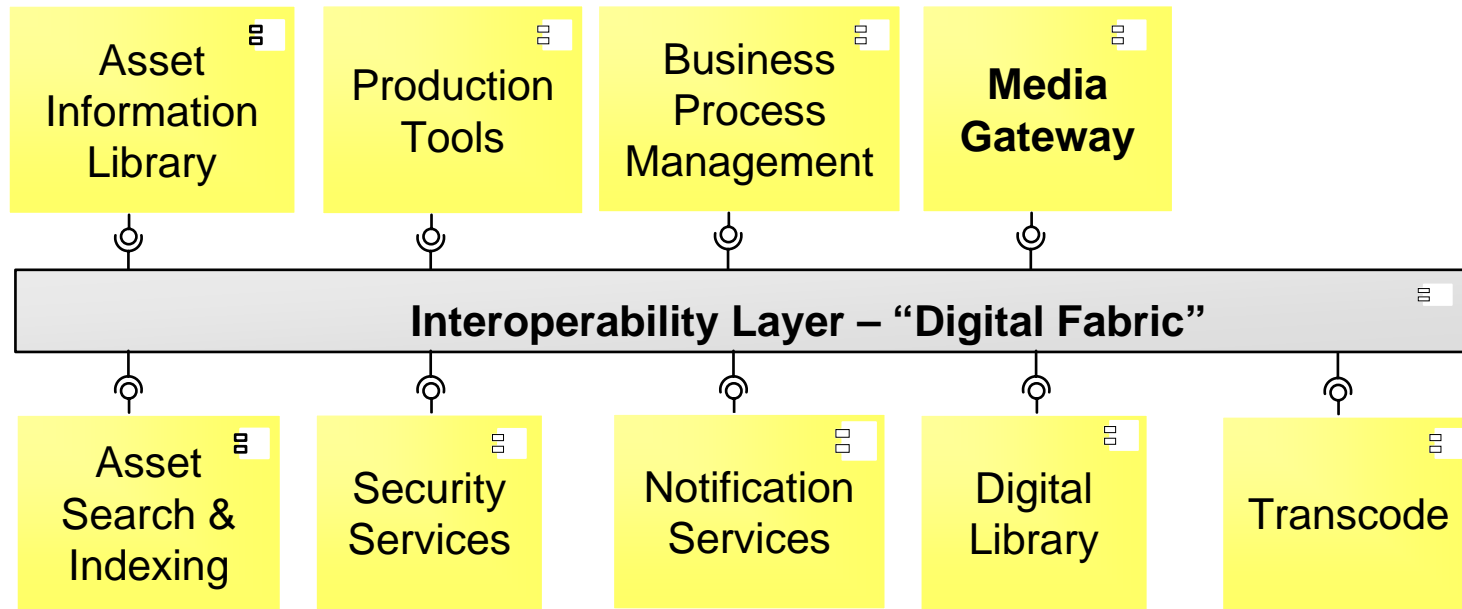


More than two partners?

- Production Gateway is a hub and spoke and assumes only two organisations are involved
- Should it be peer to peer and allow for more complex transactions?
- If so how do we manage security and maintain trust?



High-Level Digital Production – A Services Oriented Architecture

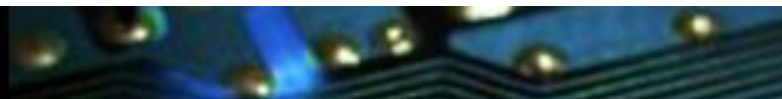


Notes

- Viewing, logging & editing tools are considered to be Production Tools
- The Digital Library comprises both media management and storage capabilities
- The Interoperability Layer provides messaging, auditing and other systems integration services

Issues

- Storage and networks – location and cost
- Changing the point of ingest
- Infrastructure versus workflow
- HD and DV – heading in the same direction?
- Workflow principle remains the same?
 - Minimum instances of high bit rate (broadcast?) files – ideally one
 - Maximum use of proxies – in various bit rates
- Quality control, confidence in files
- The business wrapper
- Metadata



What next?

- Application development - usability, functionality and support for workflow
- Agreed processes in areas like Tech Review
- Agreed policies on -
 - Metadata
 - Ownership, responsibility and liability - who's in charge of a file at any point in time?
 - Formats and Interoperability
- New Business models, how to charge for:
 - Transactions
 - Bandwidth used
 - Quality of Service requirements
- 'Broadcast formats' are no longer easy to identify, many 'browse' formats are now delivered to audiences
- Extended media exchange with audiences (User Generated Content)
 - Work on architecture and security model required

