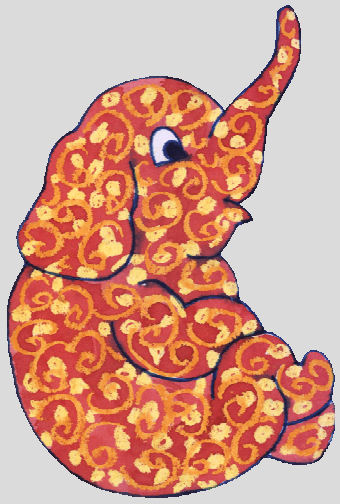


WP5 Storage Element

DataGrid Project Conference
Heidelberg, 26 Sep-01 Oct 2003

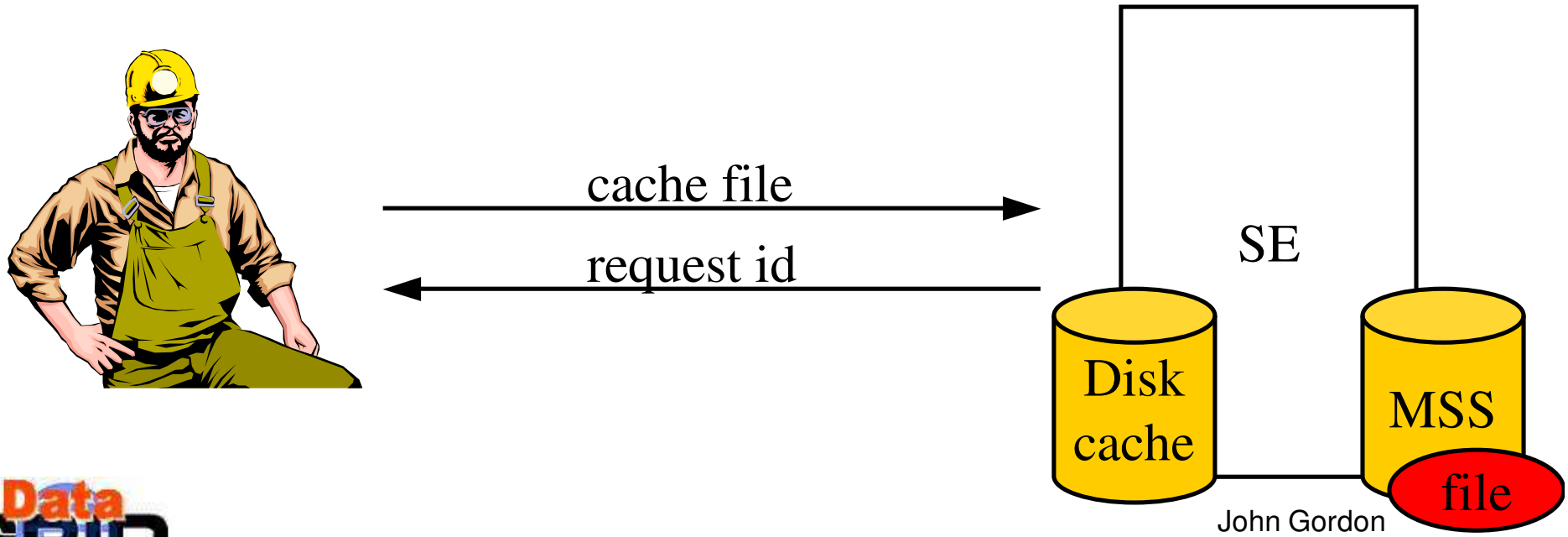
Jens G Jensen
RAL, EDG WP5

Intro

- WP5 mission was to provide a common API to Mass Storage
- People as why it is so complicated
- … because we **provided a common API to Mass Storage**
- And because we followed the **SRM interface**

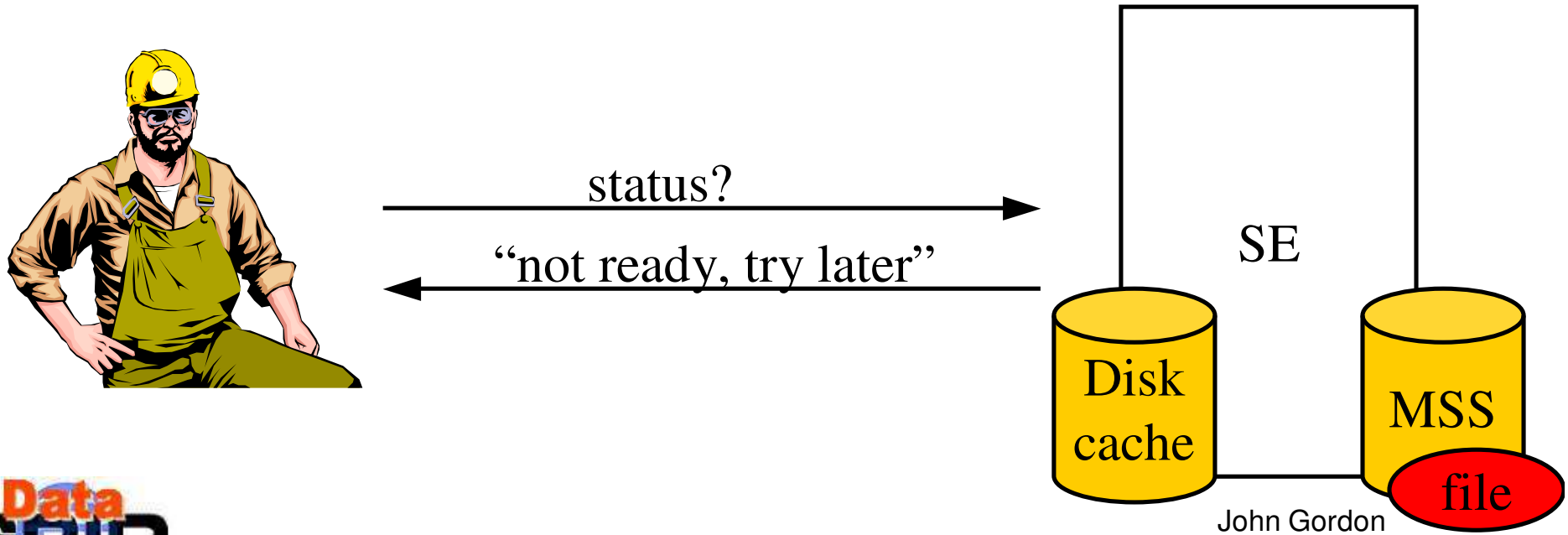
More about SRM

- Users know Site File Names (SFN) or Physical File Names (PFN)
- `lxshare0408.cern.ch/bongo/mumble`



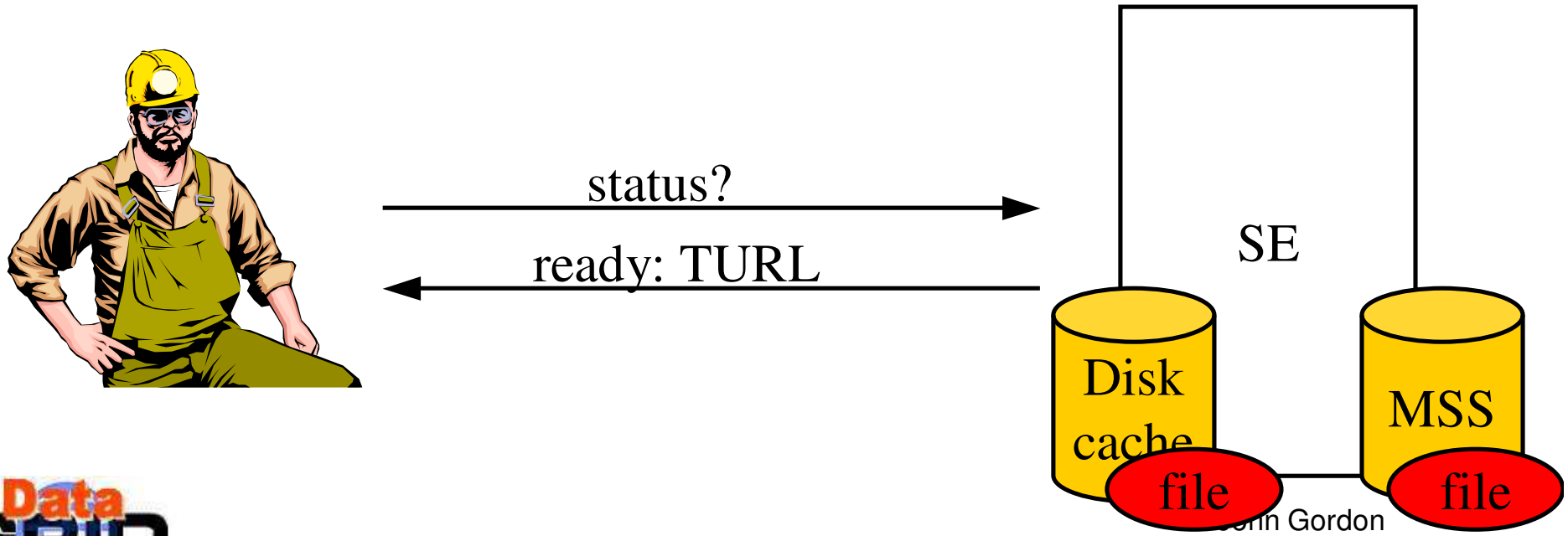
More about SRM

- Client queries the status of a request
- Better that client polls than server callbacks
- Server (ideally) able to give time estimate



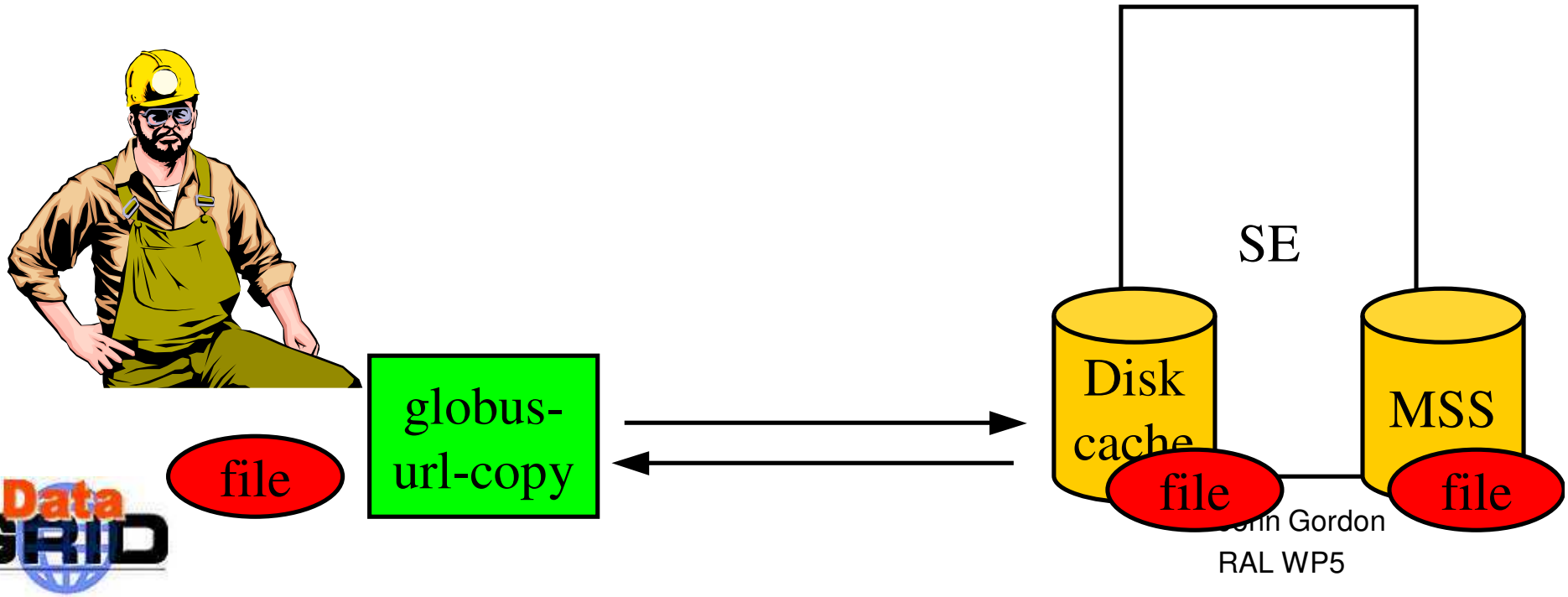
More about SRM

- When request is ready, client gets a Transfer URL (TURL)
- `gsiftp://lxshare0408.cern.ch/flatfiles/01/data/16bd30e2a899b7321baf00146acbe953`



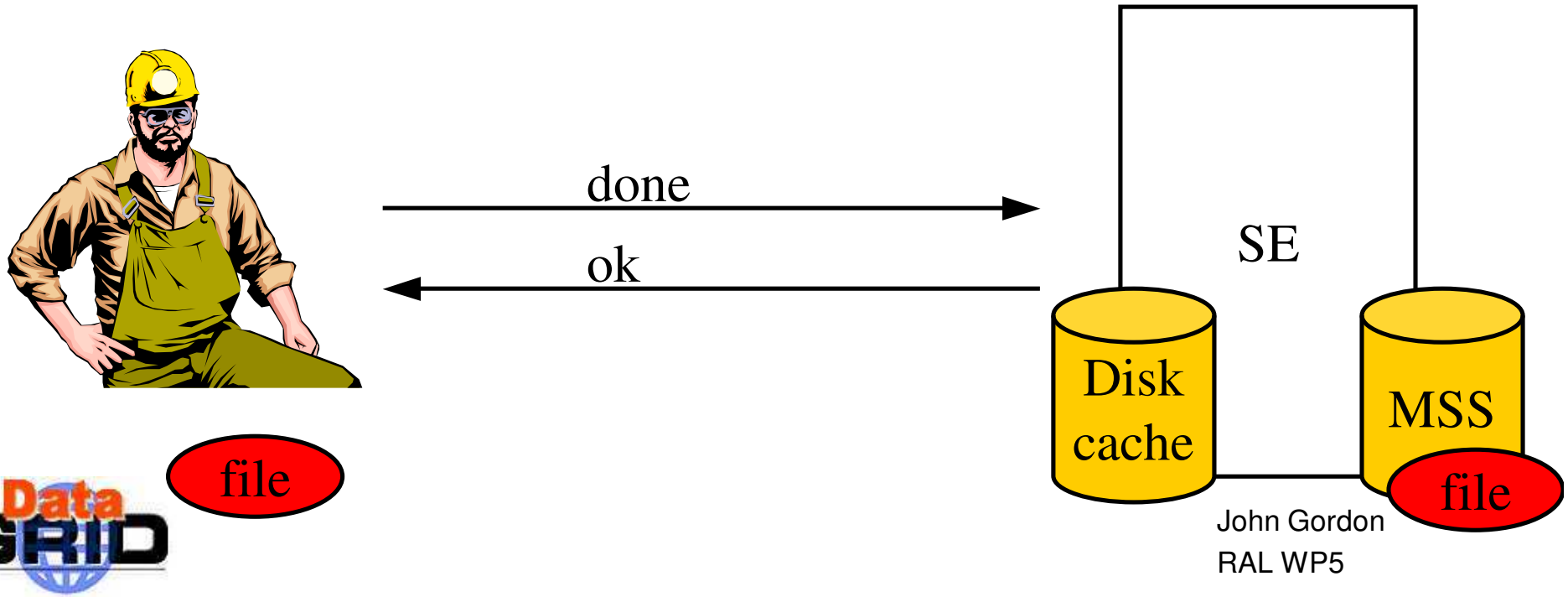
More about SRM

- Client accesses the file in the SE's disk cache using (usually) non-SE tools



More about SRM

- Finally, client informs SE that data transfer is done
- This is required for cache management etc



EDG-SE in TB2.0

- SE Control System delivered as webservice
- Provides common (blocking) interface to all SEs
  - Disk and several MSS
- Publishes GLUE Storage Schema to Information Service (RGMA)
- MSS supported
  - Castor, HPSS, ADS, disk
- Protocols supported
  - Gridftp, file, rfio
- Each VO has its own name space
  - WP9 use case

Sites

- Tested in application testbed
  - Barcelona(Castor), NIKHEF, Imperial, RAL-Tier1(ADS), RAL-PP, Karlsruhe, CC-IN2P3 Lyon
- Tested in 2.0 dev testbed but not yet integrated in app testbed
  - CERN (Castor), CC-IN2P3 (HPSS)
- Under development but not in TB2.1
  - ESRIN – AMS
  - SARA – SGI
  - INSA - Dicom

Protocols

- SE returns Transfer URL (TURL) for requested protocol
- **GridFTP**(gsiftp) can be used for data transfer to remote SE
  - File transferred using globus-url-copy
- FILE protocol provides access to disk on 'local' SE from WN when WSE filesystems nfs-mounted on WN
  - TURL= file://pathname
- rfiod runs on all Ses and clients on WNs
  - TURL= rfio://host/path (not hostname:/pathname)

WP9 Migration

- Other applications didn't want to migrate data from TB1
- WP9 had 11,000 files dstributed round TB1.4
  - Use as a migration test case without physically moving files
- WP2 tool migrates TB1 Replica Catalogue to RLS
  - And checks existence of files.
- WP5 tool run by sysadmins at each site to register files in TB2.0 SE
- Plan extended due to sysadmins wanting to move files from TB1.4 locations
- Migration still running last night

EDG-SE in TB2.1

- Bug fixes
  - Delete
  - More efficient ls to speed up edg-rm registration
- Secure mode SE
  - User identified by DN
    - VO taken from gridmapfile
  - cf insecure mode where all files owned by a site-defined user *(default John Gordon)*

Ready for demo

Developments completed but not released in TB2.1

- ACL
  - Using GACL
- SRM1.1 for GFAL
  - Implemented subset of SRMv1.1 used by GFAL spec
  - Grid File Access Library being developed by CERN for LCG
  - Implemented as adaptor class on TB2 SE

Will be ready for demo

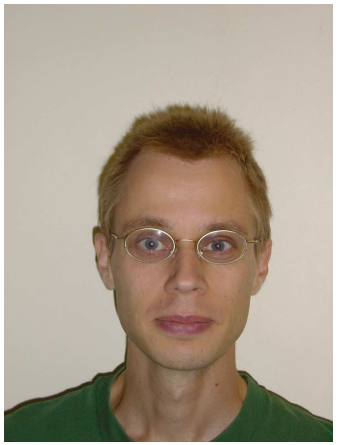
- Asynchronous (non-blocking) SE
  - Full SRM v1.1
  - As separate direct webservice
- VOMS support
  - Groups, roles, etc
  - Already supported by GACL
  - Use edg-authorisation-manager to parse VOMS credentials
- Disk Cache Management

Future Directions – post EDG

- Sell to LCG
  - For SRM and VOMS access to MSS
- Guaranteed reservations
  - SRM2 recommendations: volatile, durable, permanent *files* and *space*
- Full SRM version 2.1
- Scalability
  - Scalability will be improved by making a single SE distributed

Outro

- I am retiring as WP Manager



- Being replaced by Jens Jensen
- So long and thanks for all the fish!