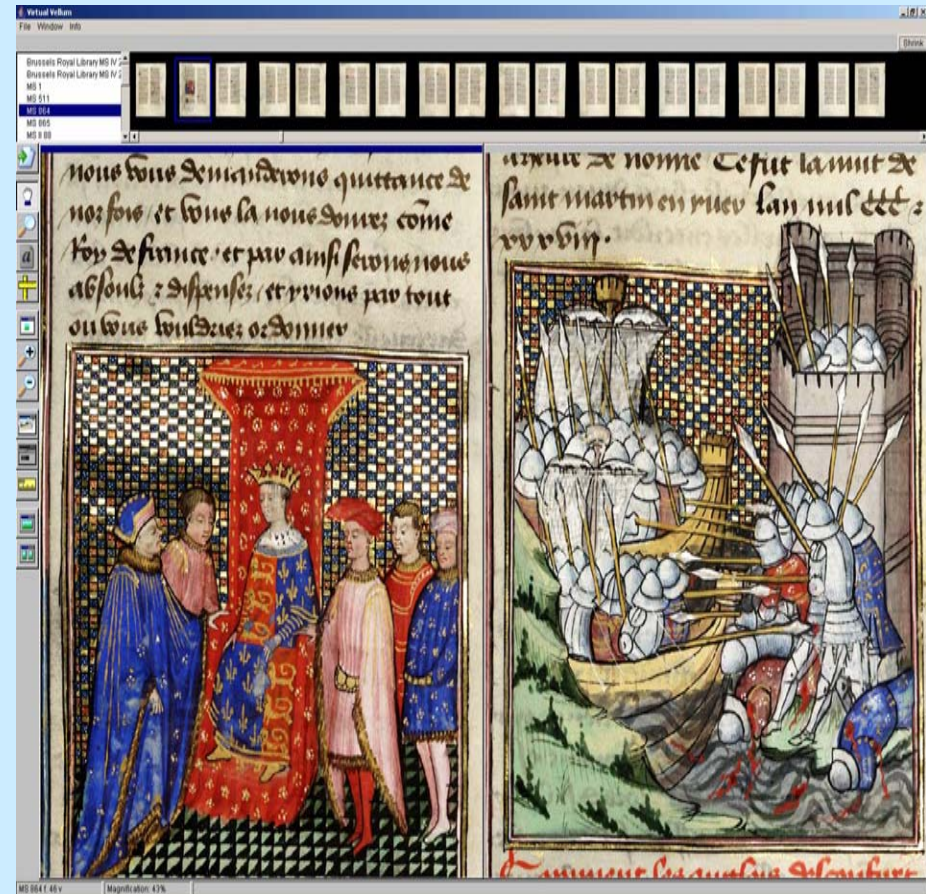




# THE WHITE ROSE GRID e-Science Centre

## Virtual Vellum

- Provides researchers with generic viewing tools and environment for image datasets comprising:
  - large volume, high-resolution image datasets
- Encoded using:
  - JPEG 2000 or tiled JPEG
- Delivered as:
  - open source & open access
  - platform independent (i.e. Windows/Mac/Linux)
- Allowing access to image datasets:
  - from a local hard drive
  - over the internet
  - via a Data Grid using Storage Resource Broker
- Ideal for:
  - Access Grid seminars
  - live conference presentations and lectures
- Froissart Manuscript Project provides initial image dataset (over 4,000 images/folios), digitally photographed by Colin Dunn, Scriptura Ltd



Images © Bibliothèque Municipale de Besançon and  
Scriptura Ltd








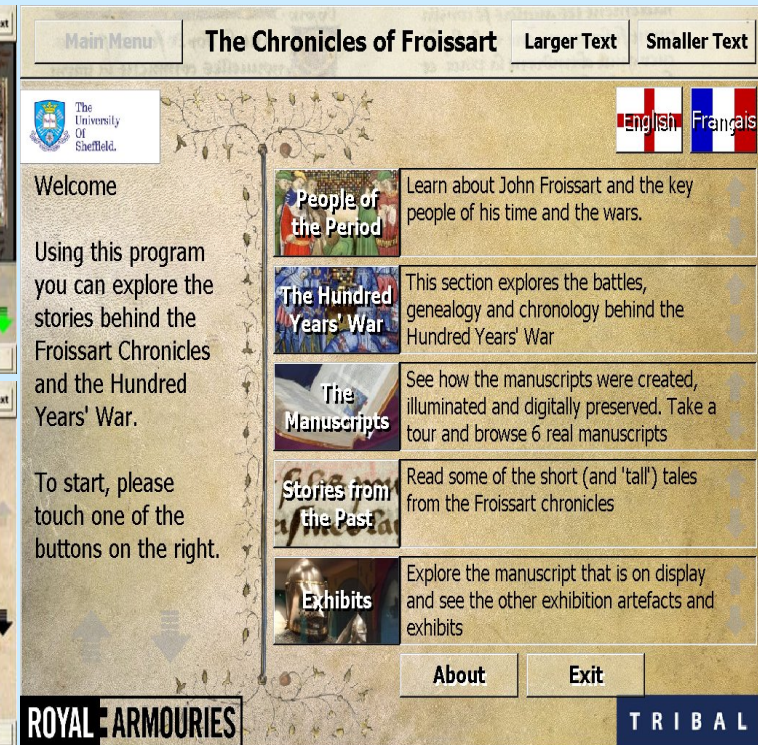
Project Web Site:  
<http://www.shef.ac.uk/hri/projects/projectpages/virtualvellum.html>



# THE WHITE ROSE GRID e-Science Centre

## Kiosque and Pegasus

-  Provides a way of displaying and scripting image manipulation for presentational purposes
-  Fully customisable interface and interaction architecture
-  Allows text and sound to sit alongside the images that are delivered via Virtual Vellum as a plug-in
-  Used to allow museum visitors to explore flexibly and interactively a set of Froissart manuscripts forming part of a public exhibition: this can either be narrative-driven or via free exploration, depending on a visitor's preference
-  Entitled "The Chronicles of Froissart", the exhibition opened at the Royal Armouries Museum, Leeds UK on 8 December 2007 for a four-month run; the content is now available online as a virtual exhibition as part of the Pegasus project, using an enhanced version of the Kiosque engine and underlying grid technologies



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Project Web Site:  
<http://www.shef.ac.uk/hri/projects/projectpages/kiosque/overview.html>





## Using Storage Resource Broker

### Through Jargon (Java) Interface – Why???

- File Access (typically 1.5 – 2 seconds)
- Download rate (needs a really big buffer ~ 0.5 – 1.0MB client-side)
- Permissions (typically 1 second per file per permission)
- Bulk Copy From
  - Files only – if you wish to upload non-file-based data using bulk upload then you need to expose/make public the void `SRBFileSystem.srbBulkLoad(int catType, String bulkLoadFilePath, SRBMetaDataRecordList[] rl)` method which registers the files which have been uploaded in a single composite file
  - Using Jargon's `SRBFile.CopyTo(...)` method, 2MB files are copied individually
  - From empirical experiments:

$$n(a+b.s)=t$$

n=no files; a=local file creation overhead time in ms; b=local file copy time in ms/byte; s=file size in bytes; t=operation time in ms

where a=20.133ms; b=73/983.040 ms/byte

This means that in practice the files need to be at least 25MB-30MB in size before bulk copying becomes impractical due to the overhead of opening files individually (i.e. set t=2,000 ms and calculate s)

(Disclaimer: this analysis is based on empirical results gather using a 100Mbps LAN connection and somewhat subjective)