



Digital Archiving: Tessella's offerings and experience

Tessella, the world leader in Digital Archiving technology, has a range of services that can help organizations exploit digital archiving to the full. This enables organizations to benefit from the knowledge management, compliance confirmation and risk control offered by this growing and business critical field.

Tessella SDB

Our 'Safety Deposit Box' is a complete OAIS compliant archiving solution ready to integrate into your operational systems or operate as a stand-alone solution.

It is a fully functional archive offering:

- High throughput ingest including file format recognition, technical metadata extraction and virus checking
- Storage adapters for bulk storage from major suppliers
- Data management tools for full control of the archive content
- All the administration and reporting tools you would expect

- Unique Active Preservation Service combining Preservation Planning based on PRONOM and Preservation Action using third party tools.
- Ease of content browsing, searching and retrieval
- Seamless integration into operational systems
- Scalability from small departmental archives to massive mass storage knowledge silos
- Tuneable workflows to allow customization to your needs

SDB, currently deployed at 7 major archives and libraries, is available for direct integration into your current workflow and management systems or customizable to fit the needs of your organization.



Consultancy

Digital Archiving is a new and potentially confusing field. Tessella consultants can help you identify and implement the right approach for you. This will include:

- Identifying the drivers for archiving
- Categorizing the data storage needs
- Planning the data archiving workflows
- Devising a preservation strategy
- Specifying the security requirements
- Helping ensure compliance with legal and regulatory requirements
- Investigating how users will search and access the contents of the archive
- Planning data disposal – what happens to information once the requirement to keep it expires
- Exploring how the archive integrates with operational systems
- Selecting the appropriate software solution
- Planning and deploying the selected solution
- Advising on digitization strategies and integration with non-digital archives

Wherever you need advice on Digital Archiving, Tessella can help you work towards the solution.

Custom development

Many organizations have requirements that cannot be fulfilled by the software solutions currently on offer and require the software to be built for their own needs.

Tessella is ideally placed to do this. We may re-use existing technologies or develop from scratch.

Our years of experience in the specification, design, development, testing and roll-out of major IT systems, combined with our expertise in the domain, will ensure the project is delivered on time, to budget and to the satisfaction of the stakeholders to provide real business benefits.

Integration and customization

Off-the-shelf solutions very rarely provide the expected benefit right out of the box and usually require extensive customization to reflect an organization's business needs. Tessella is highly skilled in identifying and performing this customization given our understanding of the aims of archiving projects and a wide knowledge of

software packages. We also have world leadership in implementing preservation strategies.

Whatever the selected archiving solution, whether your own custom software, off-the-shelf or customized third party technology, organizations only get the full benefit when it is integrated into their existing systems. This means understanding and implementing the archiving workflows, both for ingest and retrieval, allowing seamless access to the data stores.

Research

Tessella's understanding of the issues surrounding digital preservation means we are able to work with organizations to research into the basic techniques required to enable the archiving to add real value.

This includes proof of concept installations or individual techniques such as:

- High throughput ingest, including automatic data characterization
- Emulator technologies to allow long-term access to records
- Persistent Object Formats that reduce the demands of preservation recycling
- Preservation strategies to migrate information to the latest readable form
- Migration tools, including the handling of complex co-dependent formats
- Integration with existing systems
- Responding to the demands of evidential proof, including digital signatures

A complete solution

Tessella's experience has shown that a 'one size fits all' approach to Digital Archiving is not appropriate. We are able to provide a range of services that enable all organizations to benefit from the opportunities offered by Digital Archives.



Our archiving experience

In an emerging discipline, real experience is rare. Tessella has gathered many years experience with flagship organisations that will help reduce the risk of your digital archiving activities and make sure they get off to a flying start. This covers consultancy services, the delivery and support of real systems, research projects and the provision of supporting tools. We can ensure that you benefit from the pioneering work of others.

Consultancy services

Tessella has provided consultancy to a number of pharmaceutical companies to help them create strategies to deal with various stages of the lifecycle of information. These include practical storage options, records management, long-term digital preservation and knowledge management. We have also provided consultancy to the UK Houses of Parliament.

Archival systems

Tessella have been involved with the creation of a number of flagship digital archiving systems to manage long-term information. Examples include:

- The creation of the UK National Archives (TNA)'s 'Digital Archive', winner of the inaugural Pilgrim Trust and Digital Preservation Coalition Digital Preservation Award in 2004. This system allows TNA's staff to ingest complex records in any format, store them securely and provide controlled access to them. The system also allows records to be migrated, retaining the essential information content of the records whilst allowing the technology used to render that information to evolve.
- Significant enhancements of the TNA systems to include flexible ingest automation with file recognition, characterization, and verification, and most importantly to include an Active Preservation service within built policy driven file migration tools.
- Delivery of an ingest automation and metadata storage system for The British Library. This automatically ingests electronic journals from many publishers, transforms the file formats and metadata and interfaces with The British Library's existing mass storage system. This also provides a metadata store and is now being enhanced for new ingest streams.
- Delivery of SDB to the Arkib Negara (National Archives of Malaysia) to form the basis of an archiving solution fully integrated with an EDMS solution.
- Deployment of SDB as the archiving solution for the Nationaal Archief (The Netherlands), which adds complex workflows to the core SDB engine. This system is currently also being rolled out to the Gemeentearchief Rotterdam (Rotterdam City Archive).
- Delivery of SDB to the Schweizerisches Bundesarchiv (Swiss Federal Archives) including customer metadata schemas and ingest workflows.
- Deployment of SDB as the digital repository for The Wellcome Collection in London.
- Tessella is also a senior partner on the Lockheed Martin-led team that is building the US National Archives and Records Administration (NARA)'s Electronic Records Archives (ERA) system, which will hold a projected 320PB by 2022. The system will deal with migration of complex records to persistent object formats (POFs) in innovative ways.
- Development of the Central Electronic Archive (CEA) for a major pharmaceutical company to allow them to safely store a variety of data and documents needed to safeguard their intellectual property and to conform to regulatory requirements. This system deals with both archiving and deposition issues.
- Tessella is a key part of the team responsible for the management of the processed data within the 17TB store of experimental data for the Joint European Torus – the world's largest fusion research facility. This data has been generated constantly over a 20-year period and is still available live today.



Research

Although it is already possible to take a lot of practical measures to safeguard information from obsolescence, there remain significant challenges in preserving digital material for the very long-term (e.g. the creation of automated technology migration facilities).

Tessella has been involved in a number of research projects in this area for example:

- The Dutch Government's Digital Preservation Testbed project, which evaluated possible strategies for long-term preservation of born-digital government records, leading to a set of recommendations to the Dutch Government on the creation, management and long-term preservation of key electronic record types. Tessella is one of three technology providers to the EU Planets project seeking to research into future ways of preserving digital information.
- This major project, involving 16 organizations, seeks to deliver migration technologies and validated approaches. The standards used are based on the Tessella SDB archiving technology.
- Tessella are members of the EU KEEP project which aims to develop generic frameworks for hardware emulators. Our involvement follows on from our work on the Dioscuri emulator for the Koninklijke Bibliotheek (Netherlands Library).

Supporting tools

Archival systems need an array of supporting tools to allow them to provide the functionality required such as automated characterization and migration tools.

Tessella has been involved in projects in this area as well, including the development of PRONOM for the UK National Archives:

- This is a web-based repository of information on file formats and the technical components (especially application software) needed to create or access files in such formats; see www.nationalarchives.gov.uk/pronom.
- The latest release of PRONOM also includes the freely distributable Digital Record Object Identification (DROID) tool, to allow files in hundreds of file formats to be appropriately identified by detecting format-specific byte sequences.

For further information on Tessella's Digital Archiving offerings and experience please visit www.tessella.com/digitalarchiving or contact the Tessella marketing team via info@tessella.com or +44 (0)1235 555511.

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