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# Radio Frequency Identification

A standardised Data Model for the use of RFID in libraries

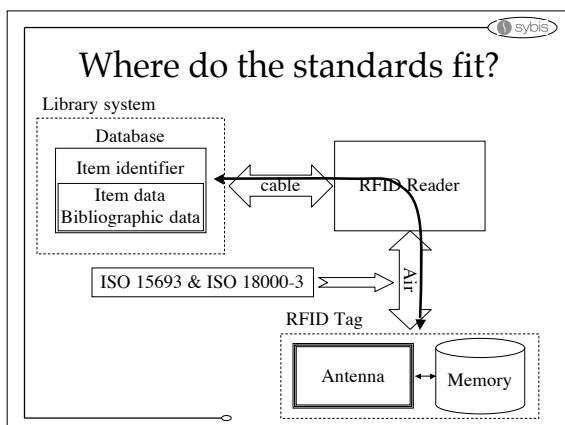
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## ISO Standards in Libraries

Current Status of standardisation

- ISO 15693
  - Except for part 1 (smart card specification)
- ISO 18000-3 (communicates at 13.56 MHz)
  - Libraries use Mode 1
  - Mode 1 compatible with ISO 15693



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### What are the benefits?

- Purchasing
  - ISO tags are available from a range of suppliers
  - Not locked into purchasing from a single supplier
  - Cooperative purchasing possible

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### What don't the standards cover?

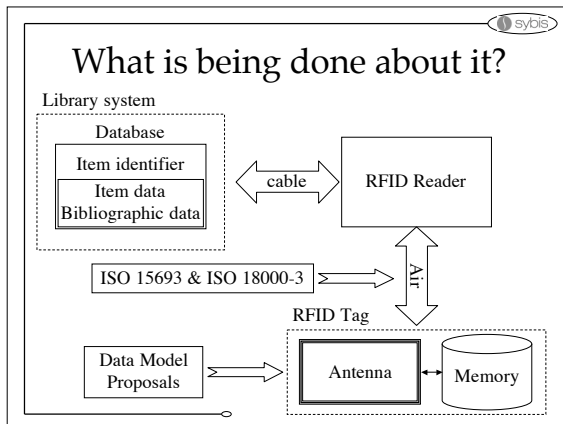
Not prescribed in the standards:

- The Tag Data Model
  - What specific data is written to the tag
  - How the data is arranged on the tag
  - The data encoding standard
- The item security methodology
- Privacy and data security mechanisms.

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### What are the implications?

- No interoperability between systems
  - Adjacent systems with ISO tags - cannot be read
- Reprogram tags when swapping vendors
  - Tags require reformatting to suit new vendor
- Difficult to mix & match equipment
  - Self serve loans devices
  - Self Serve returns devices
  - Hand held devices.



## ISO Standards in Libraries

### Benefits of a standard data model

- Provides a structure in which to place data
  - The format of the data fields
  - The arrangement of the data fields
- Specifies how the data will be encoded
- Specifies the methodology for item security
- Specifies what is mandatory vs optional.

## Data Model Proposals

RFID Data Model for Libraries

Denmark

Proposal for a Data Model  
RFID Data Model for Libraries Working Group  
Affiliated to Danish Standard S 2434

Final document - July 2005  
Status: Public

## Data Model Proposals

Generic Set of Requirements RFID for public Libraries  
NBL - Nederlandse Vereniging van Publieke Bibliotheken

Version number: English Language 01.00

The Netherlands

NBL - Nederlandse Vereniging van Publieke Bibliotheken  
Conventieplein 12, 1017 CA Amsterdam  
Postbus 10140  
1001 CA Amsterdam  
Phone: +31 20 488 8100  
The Netherlands  
Facsimile: +31 20 488 82 00  
www.nbl.nl  
e-mail: info@nbl.nl

## Data Model Proposals

RFID Data Model for Libraries

Finland

Proposal for a Data Model  
Finnish Libraries' RFID Working Group  
Based on the document prepared by the Danish RFID Data Model for Libraries Working Group

Final document - November 24 2005  
Status: Public

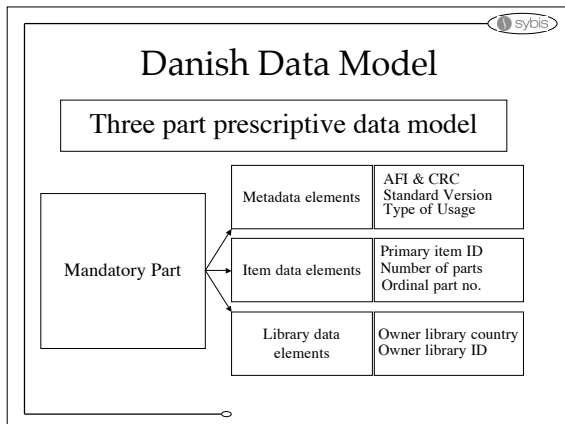
## Danish Data Model

### Three part prescriptive data model

Mandatory Part	Structured Extension Part	Unstructured Extension Part
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All applications can read this part

Some applications can read this part



- ## Prescriptive models - problems
- Difficult to gain agreement about data elements
  - Very limited flexibility
  - More appropriate for local needs than international use
  - Large mandatory part may not suit all libraries
  - Can be inefficient in some applications
  - Truism: prescription begets more prescription

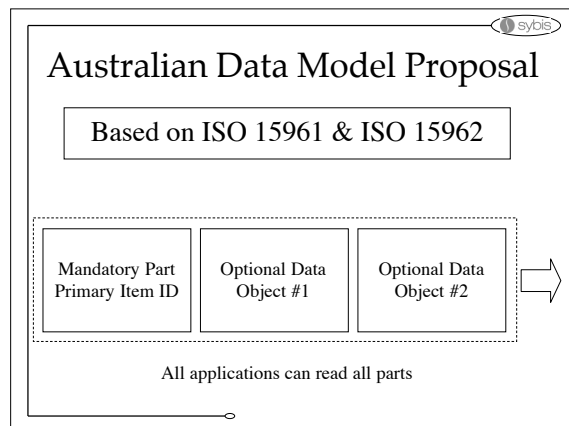
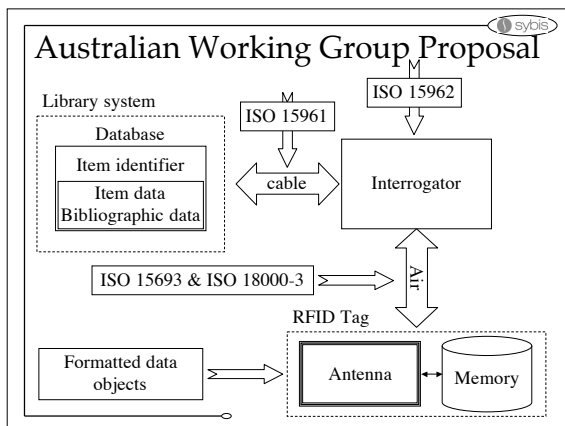
RFID for Libraries  
Standards Australia Working Group IT-19-01-02  
Proposal for a Library RFID Data Model


# Australia

Standards Australia Pty Ltd (60-61-62)  
 Corner Old Bailey Street  
 Sydney  
 NSW 2000  
 Australia  
 Phone: +61 2 9750 6447  
 Fax: +61 2 9750 6166  
 Email: info@standards.com.au

Status: Draft 04 August 2006

- ## Australian Working Group Proposal
- To create a data model with maximum flexibility
  - To lay a foundation for full interoperability
  - To present a realistic project for vendor implementation
  - To use existing standards where possible
  - To mandate the minimum of data
  - To allow for future technology or market changes.






## ISO TC46/SC4/WG11

October 2006 - ISO 28560


- ISO working group - International data-model project
- Meeting # 1 - Copenhagen December 1st 2006
- Meeting # 2 - Copenhagen June 11th 2007
- Meeting # 3 - London September 21st 2007.



## ISO TC46/SC4/WG11

Progress to date


- List of data objects compiled - general agreement
- Concept of regional or institutional profiles
- Suppliers should be able to assist with migration
- Little overlap with publisher's requirement right now
- Discussions confined to High Frequency tags.



## ISO TC46/SC4/WG11

Progress to date


- Previous sticking point - existing national initiatives
- Similar proposals from Australia, UK, USA
- Working draft for ISO 28560 developed by Aus/UK
- NISO group will publish their working document soon
- Backwards compatibility at the tag level not possible.



## ISO TC46/SC4/WG11

Current status - post September meeting


- ISO 28560 to be split into three parts
  - Part 1 - Definition of data elements for RFID tag
  - Part 2 - Encoding rules using ISO 15962
  - Part 3 - Encoding rules for fixed memory model.



## ISO TC46/SC4/WG11

Implications

- Part 1 common to both encoding methods
- Part 2 encoding preferred by AU, USA, UK, etc
- Part 3 encoding preferred by Denmark, Japan
- Parts 2 & 3 encoding models not interoperable
- Much work already completed on part 2 encoding
- Vendors can begin implementing sooner



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