The ILL Protocol Standard: Interlibrary Loan in an Open Networked Environment

IFLA Conference Session 100: September 2, 1997, 9:00 - 11:40

AGENDA
9:00-9:10 Welcome and Introductions - Fay Turner
9:10-9:50 Overview of the ILL Protocol Standard - Fay Turner
9:50-10:30 Overview of North American Activities - Mary Jackson
10:30-10:45 Break
10:45-11:15 Overview of European and Australian Activities - Ruth Moulton
11:15-11:40 The Application of the ILL Protocol to Existing ILL Scenarios - Mary Jackson
THE INTERLIBRARY LOAN PROTOCOL STANDARD

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WHAT IS THE ILL PROTOCOL?

INTERNATIONAL STANDARD FOR INTERLIBRARY LOAN (ILL) COMMUNICATIONS

APPROVED IN 1991


» ISO 10160: SERVICE DEFINITION
» ISO 10161-1: PROTOCOL SPECIFICATION
WHY WAS IT DEVELOPED?

● TO OVERCOME THE BARRIER TO ILL COMMUNICATIONS
  – PROLIFERATION OF INCOMPATIBLE ILL SYSTEMS: DIFFERENT MESSAGE SETS AND MESSAGE FORMATS
    » PROTOCOL STANDARDIZES MESSAGE SET AND MESSAGE FORMAT
    » PERMITS COMMUNICATION BETWEEN SYSTEMS THAT USE DIFFERENT HARDWARE AND SOFTWARE
WHY WAS IT DEVELOPED?

● TO FACILITATE ILL AUTOMATION

– MANUAL RECORDING, PROCESSING AND TRACKING CUMBERSOME AND TIME CONSUMING

» PROTOCOL PROVIDES BASIS FOR AUTOMATING ILL REQUESTING, SUPPLYING, AND TRACKING
WHY WAS IT DEVELOPED?

- TO SUPPORT RESOURCE SHARING
  
  » ILL A BUILDING BLOCK FOR RESOURCE SHARING

  » PROTOCOL OFFERS STANDARDIZED ILL COMMUNICATIONS ACROSS BOUNDARIES
ILL PROTOCOL

- STANDARDIZES FOUR ASPECTS OF ILL COMMUNICATIONS:
  1. NUMBER AND TYPE OF MESSAGES
  2. DATA ELEMENTS WITHIN THE MESSAGES
  3. CORRECT SEQUENCE FOR THE COMMUNICATION OF MESSAGES
  4. TRANSFER SYNTAX
ILL PROTOCOL ROLES

- PROTOCOL SPECIFIES THE BEHAVIOUR OF SYSTEMS, NOT END-USERS

- SYSTEM ROLES:
  » REQUESTER (BORROWING LIBRARY)
  » RESPONDER (LENDER)
  » INTERMEDIARY (REQUESTER & RESPONDER)
ILL SERVICES

- DEFINES A FULL SUITE OF SERVICES FOR ALL STAGES OF AN ILL TRANSACTION
  - 21 SERVICES: MANDATORY OR OPTIONAL
  - MESSAGES (APDUs): MANDATORY OR OPTIONAL
REQUESTER SERVICES

ILL-REQUEST (loan, location, copy, estimate, responder-specific)
CONDITIONAL -
REPLY
CANCEL
RECEIVED
RENEW
RETURNED

STATUS-QUERY
STATUS-OR-
ERROR-REPORT
LOST
DAMAGED
MESSAGE

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# RESPONDER SERVICES

<table>
<thead>
<tr>
<th>FORWARD</th>
<th>RENEW ANSWER</th>
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<tr>
<td>FORWARD-</td>
<td>RECALL</td>
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<tr>
<td>NOTIFICATION,</td>
<td>OVERDUE</td>
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<tr>
<td>CANCEL-REPLY</td>
<td>CHECKED-IN</td>
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<tr>
<td>SHIPPED</td>
<td>STATUS-QUERY</td>
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<tr>
<td>ILL-ANSWER</td>
<td>STATUS-OR-ERROR-REPORT</td>
</tr>
<tr>
<td><em>(conditional, retry, unfilled, locations-provided, will supply, hold placed, estimate)</em></td>
<td>LOST</td>
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<tr>
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<td>DAMAGED</td>
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<td>MESSAGE</td>
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DATA ELEMENTS

● SPECIFIES DATA ELEMENTS WITHIN EACH SERVICE/MESSAGE

ILL-REQUEST:

TRANSACTION ID, REQUESTER ID, RESPONDER ID, CLIENT ID, DELIVERY & BILLING ADDRESSES, EXPIRY AND NEEDED BY DATES, MEDIUM TYPE DESIRED, COST INFO, COPYRIGHT COMPLIANCE, PERMISSIONS

AUTHOR, TITLE, SUBTITLE, PLACE OF PUBLICATION, PUBLISHER, SERIES TITLE AND NUMBER, EDITION, VOLUME, ARTICLE TITLE, ARTICLE AUTHOR, ISSN, ISBN, SYSTEM NO., CALL NUMBER, ADDITIONAL NUMBERS
TRANSACTION STATES

● PROTOCOL STATE ASSOCIATED WITH EACH SERVICE/MESSAGE
  e.g. requester has sent request: PENDING state
  responder has shipped doc.: SHIPPED state
  requester has received doc.: RECEIVED state
  » CONTROLS CORRECT SEQUENCE OF EVENTS: STATE MACHINE
  » PROVIDES TRACKING INFORMATION
TRANSFER SYNTAX

● ENCODING OF MESSAGE TO PERMIT COMPUTER PROCESSING OF THE DATA
  » ASN.1 BASIC ENCODING RULES (BER)
  » EDIFACT
MANAGEMENT INFORMATION

- FACILITATES PROVISION OF ILL MANAGEMENT INFO:
  - REQUESTER, RESPONDER, MESSAGE TYPE, DATE OF MESSAGE, TRANS. ID, STATE OF TRANSACTION, ETC.
  - ITEMS REQUESTED AND SUPPLIED, CLIENTS, BORROWERS, SUPPLIERS, RESPONSE TIME, SUCCESS RATE, COSTS, ETC.
NETWORKING MODELS
SUPPORTED

● SIMPLE TRANSACTION
  » 2 PARTIES
    – PATRON TO LIBRARY, LIBRARY TO
      LIBRARY, LIBRARY TO SUPPLIERS
    – FORWARDING

● CHAINED TRANSACTION
  » 3 OR MORE PARTIES
    – ALL MESSAGES PASS THROUGH AN
      INTERMEDIARY
NETWORKING MODELS SUPPORTED

● PARTITIONED TRANSACTIONS
  » 3 OR MORE PARTIES
    – ALL MESSAGES LEADING TO THE SUPPLY OF ITEM PASS THROUGH INTERMEDIARY
    – TRACKING MESSAGES PASS BETWEEN REQUESTER AND SUPPLIER
HOW DOES THE PROTOCOL WORK?

- SERVICES ACTIVATED IN LOCAL SYSTEM
- MESSAGE MAY OR MAY NOT BE SENT
- STATE OF TRANSACTION UPDATED
- TERMINAL STATES: e.g. RECEIVED, RETURNED, SHIPPED, CHECKED-IN, NOT-SUPPLIED, CANCELLED, LOST
BENEFITS TO LIBRARIES

● ENABLES ILL SYSTEMS TO COMMUNICATE REGARDLESS OF HARDWARE OR SOFTWARE
● SUPPORTS LOCAL MANAGEMENT AND TRACKING OF INCOMING AND OUTGOING ILL REQUESTS
BENEFITS TO LIBRARIES

- PROVIDES FOUNDATION FOR DEVELOPMENT OF AUTOMATED SYSTEMS
- ENSURES THAT A COMMUNITY OF USERS SHARE A COMMON SET OF MESSAGES AND DATA ELEMENTS
IMPLEMENTATIONS

● CANADA (1987 - )
  » NATIONAL LIBRARY OF CANADA
  » UNIVERSITÉ DU QUÉBEC
  » AVISO and INTERLEND

● EUROPE
  » GERMANY, IRELAND
IMPLEMENTATIONS

● UNITED STATES
  » TRIANGLE RESEARCH LIBRARY NETWORK (1993 - )

● ILL PROTOCOL IMPLEMENTORS GROUP (IPIG) (1995 - )
  » 40 ORGANIZATIONS, 10 COUNTRIES
WEB RESOURCES

● ILL APPLICATION STANDARDS MAINTENANCE AGENCY
  » http://www.nlc-bnc.ca/iso/ill/

● ILL PROTOCOL IMPLEMENTORS GROUP
  » http://arl.cni.org/access/naildd/ipighome.html