

DEFECT REPORT

- 1. Report Number:** 05
- 2. Source of report:** Johann C. Zeeman for ILL Protocol Implementors Group (IPIG)
- 3. Report Submitted to:** Interlibrary Loan Application Standards Maintenance Agency: 10 March 1998; revised following Advisory Committee review and submitted to TC46/SC4 Secretariat, 7 May 1998.
- 4. Report Concerning:** ISO 10161-1:1997(E)
- 5. Type of Defect:** Editorial
- 6. References in Document:** Clause 8.2.2; Annex A, tables A4 and A5.
- 7. Nature of Defect:**

Discussion at the ILL Protocol Implementors Group (IPIG) meeting at Chapel Hill NC in February 1998 has revealed that there is an inconsistency between the transition from the processing phase to the tracking phase of an ILL transaction as described in clause 8.2.2 of ISO 10161-1:1997 (E) and the state transitions permitted by the requester state tables (Annex A, tables A4 and A5).

Clause 8.2.2 specifies that the tracking phase begins when the requester system has entered the received state:

The processing phase for the requester includes all events and actions up to and including the receipt of the requested item. This phase normally terminates in the RECEIVED state. ... The existence of a tracking phase for an ILL-transaction is indicated by the RETURN protocol variable. A value of TRUE indicates that the tracking phase is applicable and the associated procedures must be followed. ... The requester sets the RETURN variable when the triggering event is RECEIVED.request.

However, the requester state table A.5a shows the event RECEIVED.request as occurring within the tracking phase itself (e.g., in SHIPPED state with event RECEIVED.request).

Although many implementors have interpreted the transition between the processing and tracking phase as purely conceptual, the protocol permits an implementor to make state table processing dependent on the phase of the transaction. For these implementors, the current layout of the state tables will lead to some events being considered as protocol errors when the state transition diagrams in ISO 10160 indicate that they should be valid (albeit exceptional or out-of-sequence) events. For instance, the table A4 currently implies that the receipt of an OVERDUE APDU while in the processing phase is a protocol error, even though the sequencing rules and the state transition diagrams clearly indicate this is a valid event.

8. Solution Proposed by the Source:

It is proposed to alter the requester state tables (A.4 and A.5) to make them consistent with the phase transition as described in clause 8.2.2. This involves the following changes:

1. Delete the columns for the PENDING, CANCEL-PENDING and SHIPPED states from table A.5a, since these states are only valid whilst the ILL APM is in the processing phase;
2. Replicate the rows from table A.5a for the OVERDUE, RECALL and CHECKED-IN events into table A.4, since these events may legitimately occur whilst the ILL APM is in the processing phase. Receipt of these events whilst in the PENDING, CANCEL-PENDING or SHIPPED states will cause the RETURN variable to be set to TRUE, and the appropriate state transition to a tracking state to be made.

Add a final paragraph to clause 8.2.2 as follows:

Exceptionally, the requester may also infer that the transaction is for a returnable item on receipt of certain APDUs not normally expected prior to the receipt of the item. When an OVERDUE, RECALL or CHECKED-IN APDU is received while in the PENDING, CANCEL-PENDING or SHIPPED state, the requester infers that the transaction is for a returnable item and sets the value of the RETURN variable to TRUE. This will cause the transaction to enter the tracking phase, even though the item may not yet have been received. Also, the requestor may regard the transition to another terminal state (such as LOST) as entering the tracking phase.

These changes will be transparent to implementors who have not made a systematic distinction between the processing and tracking phases of a transaction. Those implementors who have made a distinction between the processing and tracking phases in their state table implementations will have to make some changes to the behaviour of their systems.

Amended versions of tables A.4, and A.5 are included with this report. A column from table A5b has been moved to table A.5a to give a more balanced appearance; this is a only a change in appearance of the tables, not in their meaning.

In Table A.4, the rows for the incoming events "LSTreq repeat" and "LST repeat" in Table A.4 have been removed because all cells were blank indicating that there were no valid action intersections for these events.

9. Secretariat's Response: Pending

Table A.4 Requester State Table -Processing Phase

	IDLE	PENDING	NOT-SUPPLIED	CONDITIONAL	CANCEL-PENDING	CANCELLED	SHIPPED
ILLreq	p1 ILL PENDING						
ILLreq repeat		ILL PENDING					
C-REPreq +				C-REP + PENDING			
C-REPreq + repeat		C-REP + PENDING					
C-REPreq -				C-REP - NOT-SUPPLIED			
C-REPreq - repeat			C-REP - NOT-SUPPLIED				
CANreq		CAN CANCEL- PENDING					
CANreq repeat					CAN CANCEL- PENDING		
RCVreq		RCV (opt) set RETURN var RECEIVED			RCV (opt) set RETURN var RECEIVED		RCV(opt) set RETURN var RECEIVED
LSTreq		LST LOST			LST LOST		LST LOST
MSGreq		MSG PENDING	MSG NOT-SUPPLIED	MSG CONDITIONAL	MSG CANCEL- PENDING	MSG CANCELLED	MSG SHIPPED
STQreq		STQ PENDING	STQ NOT-SUPPLIED	STQ CONDITIONAL	STQ CANCEL- PENDING	STQ CANCELLED	STQ SHIPPED
STRreq		STR PENDING	STR NOT-SUPPLIED	STR CONDITIONAL	STR CANCEL- PENDING	STR CANCELLED	STR SHIPPED
FWD		FWDind PENDING			FWDind PENDING		
FWD repeat		FWDind PENDING					
ANS-CO		p7 ANSind-CO CONDITIONAL	ANSind-CO NOT-SUPPLIED	ANSind-CO CONDITIONAL	p7 ANSind-CO CANCEL- PENDING	ANSind-CO CANCELLED	
ANS-CO		^p7 ANSind-CO PENDING	ANSind-CO NOT-SUPPLIED	ANSind-CO CONDITIONAL	^p7 ANSind-CO CANCEL- PENDING	ANSind-CO CANCELLED	

Table A.4 Requester State Table -Processing Phase

	IDLE	PENDING	NOT-SUPPLIED	CONDITIONAL	CANCEL-PENDING	CANCELLED	SHIPPED
ANS-CO repeat		ANSind-CO PENDING	ANSind-CO NOT-SUPPLIED	ANSind-CO CONDITIONAL	ANSind-CO CANCEL-PENDING	ANSind-CO CANCELLED	
ANS-RY		ANSind-RY NOT-SUPPLIED	ANSind-RY NOT-SUPPLIED		ANSind-RY NOT-SUPPLIED		
ANS-RY repeat			ANSind-RY NOT-SUPPLIED				
ANS-UN		ANSind-UN NOT-SUPPLIED	ANSind-UN NOT-SUPPLIED		ANSind-UN NOT-SUPPLIED		
ANS-UN repeat			ANSind-UN NOT-SUPPLIED				
ANS-LP		ANSind-LP NOT-SUPPLIED	ANSind-LP NOT-SUPPLIED		ANSind-LP NOT-SUPPLIED		
ANS-LP repeat			ANSind-LP NOT-SUPPLIED				
ANS-WS		ANSind-WS PENDING	ANSind-WS NOT-SUPPLIED	ANSind-WS CONDITIONAL	ANSind-WS CANCEL-PENDING		ANSind-WS SHIPPED
ANS-WS repeat		ANSind-WS PENDING	ANSind-WS NOT-SUPPLIED	ANSind-WS CONDITIONAL	ANSind-WS CANCEL-PENDING		ANSind-WS SHIPPED
ANS-HP		ANSind-HP PENDING	ANSind-HP NOT-SUPPLIED	ANSind-HP CONDITIONAL	ANSind-HP CANCEL-PENDING		ANSind-HP SHIPPED
ANS-HP repeat		ANSind-HP PENDING	ANSind-HP NOT-SUPPLIED	ANSind-HP CONDITIONAL	ANSind-HP CANCEL-PENDING		ANSind-HP SHIPPED
ANS-ES		ANSind-ES NOT-SUPPLIED	ANSind-ES NOT-SUPPLIED		ANSind-ES NOT-SUPPLIED		
ANS-ES repeat			ANSind-ES NOT-SUPPLIED				
CAR +					CARind + CANCELLED	CARind + CANCELLED	
CAR + repeat						CARind + CANCELLED	
CAR -		CARind - PENDING			CARind - PENDING		CARind - SHIPPED
CAR - repeat		CARind - PENDING					CARind - SHIPPED
SHI		SHIind SHIPPED			SHIind SHIPPED		SHIind SHIPPED
SHI repeat							SHIind SHIPPED
DUE		DUEind set RETURN var = TRUE NOT-RCVD/ OVERDUE			DUEind set RETURN var = TRUE NOT-RCVD/ OVERDUE		DUEind set RETURN var = TRUE NOT-RCVD/ OVERDUE

Table A.4 Requester State Table -Processing Phase

	IDLE	PENDING	NOT-SUPPLIED	CONDITIONAL	CANCEL-PENDING	CANCELLED	SHIPPED
RCL		RCLind set RETURN var = TRUE RECALL			RCLind set RETURN var = TRUE RECALL		RCLind set RETURN var = TRUE RECALL
CHK		CHKind set RETURN var = TRUE RETURNED			CHKind set RETURN var = TRUE RETURNED		CHKind set RETURN var = TRUE RETURNED
MSG		MSGind PENDING	MSGind NOT-SUPPLIED	MSGind CONDITIONAL	MSGind CANCEL-PENDING	MSGind CANCELLED	MSGind SHIPPED
STQ		STQind PENDING	STQind NOT-SUPPLIED	STQind CONDITIONAL	STQind CANCEL-PENDING	STQind CANCELLED	STQind SHIPPED
STR		STRind PENDING	STRind NOT-SUPPLIED	STRind CONDITIONAL	STRind CANCEL-PENDING	STRind CANCELLED	STRind SHIPPED
EXP		EXPind NOT-SUPPLIED	EXPind NOT-SUPPLIED	EXPind NOT-SUPPLIED	EXPind NOT-SUPPLIED		
LST		LSTind LOST			LSTind LOST		LSTind LOST

Table A.5a Requester State Table -Tracking Phase (Part 1)

	RECEIVED	RENEW/PENDING	RENEW/OVERDUE	NOT-RCVD/OVERDUE
RCVreq				RCV (opt) OVERDUE
RCVreq repeat	RCV (opt) RECEIVED			
RET req	p5 RET (opt) RETURNED	RET (opt) RETURNED	RET (opt) RETURNED	
RETreq repeat				
RENreq	p5 REN RENEW/ PENDING		REN RENEW/ OVERDUE	
RENreq Repeat		REN RENEW/ PENDING	REN RENEW/ OVERDUE	
LSTreq	p5 LST LOST	LST LOST	LST LOST	LST LOST
LSTreq repeat				
DAMreq	DAM RECEIVED	DAM RENEW/ PENDING	DAM RENEW/ OVERDUE	
MSGreq	MSG RECEIVED	MSG RENEW/ PENDING	MSG RENEW/ OVERDUE	MSG NOT-RCVD/ OVERDUE
STQreq	STQ RECEIVED	STQ RENEW/ PENDING	STQ RENEW/ OVERDUE	STQ NOT-RCVD/ OVERDUE
STRreq	STR RECEIVED	STR RENEW/ PENDING	STR RENEW/ OVERDUE	STR NOT-RCVD/ OVERDUE
ANS-WS	ANSind-WS RECEIVED	ANSind-WS RENEW/ PENDING	ANSind-WS RENEW/ OVERDUE	ANSind-WS NOT-RCVD/ OVERDUE
ANS-WS repeat	ANSind-WS RECEIVED	ANSind-WS RENEW/ PENDING	ANSind-WS RENEW/ OVERDUE	ANSind-WS NOT-RCVD/ OVERDUE
ANS-HP	ANSind-HP RECEIVED	ANSind-HP RENEW/ PENDING	ANSind-HP RENEW/ OVERDUE	ANSind-HP NOT-RCVD/ OVERDUE
ANS-HP repeat	ANSind-HP RECEIVED	ANSind-HP RENEW/ PENDING	ANSind-HP RENEW/ OVERDUE	ANSind-HP NOT-RCVD/ OVERDUE
CAR -	CARind - RECEIVED	CARind - RENEW/ PENDING	CARind - RENEW/ OVERDUE	CARind - NOT-RCVD/ OVERDUE
CAR - repeat	CARind - RECEIVED	CARind - RENEW/ PENDING	CARind - RENEW/ OVERDUE	CARind - NOT-RCVD/ OVERDUE
SHI	SHIind RECEIVED	SHIind RENEW/ PENDING	SHIind RENEW/ OVERDUE	SHIind NOT-RCVD/ OVERDUE
SHI repeat	SHIind RECEIVED	SHIind RENEW/PENDING	SHIind RENEW/ OVERDUE	SHIind NOT-RCVD/ OVERDUE

Table A.5a Requester State Table -Tracking Phase (Part 1)

	RECEIVED	RENEW/PENDING	RENEW/OVERDUE	NOT-RCVD/OVERDUE
RCL	p5 RCLind RECALL	RCLind RECALL	RCLind RECALL	RCLind RECALL
RCL repeat				
DUE	p5 DUEind OVERDUE	DUEind RENEW/ OVERDUE	p7 and p8 DUEind OVERDUE	
DUE	p5 DUEind OVERDUE	DUEind RENEW/ OVERDUE	^p7 DUEind RENEW/ OVERDUE	
DUE repeat			DUEind RENEW/ OVERDUE	DUEind NOT-RCVD/ OVERDUE
LST				LSTind LOST
LST repeat				
DAM				
MSG	MSGind RECEIVED	MSGind RENEW/ PENDING	MSGind RENEW/ OVERDUE	MSGind NOT-RCVD/ OVERDUE
STQ	STQind RECEIVED	STQind RENEW/ PENDING	STQind RENEW/ OVERDUE	STQind NOT-RCVD/ OVERDUE
STR	STRind RECEIVED	STRind RENEW/ PENDING	STRind RENEW/ OVERDUE	STRind NOT-RCVD/OVERDUE
REA +	p5 REAind + RECEIVED	REAind + RECEIVED	REAind + RECEIVED	
REA + repeat	REAind + RECEIVED			
REA -	p5 REAind - RECEIVED	REAind - RECEIVED	REAind - OVERDUE	
REA - repeat	REAind - RECEIVED			
CHK	p5 CHKind RETURNED	CHKind RETURNED	CHKind RETURNED	CHKind RETURNED
CHK repeat				

Table A.5b Requester State Table -Tracking Phase (Part 2)

	OVERDUE	RETURNED	LOST	RECALL
RCVreq				RCV (opt) RECALL
RCVreq repeat				
RETreq	RET (opt) RETURNED	RET (opt) RETURNED		RET (opt) RETURNED
RETreq repeat		RET (opt) RETURNED		
RENreq	REN RENEW/OVERDUE			
RENreq repeat				
LSTreq	LST LOST	LST LOST	LST LOST	LST LOST
LSTreq repeat			LST LOST	
DAMreq	DAM OVERDUE	DAM RETURNED		DAM RECALL
MSGreq	MSG OVERDUE	MSG RETURNED	MSG LOST	MSG RECALL
STQreq	STQ OVERDUE	STQ RETURNED	STQ LOST	STQ RECALL
STRreq	STR OVERDUE	STR RETURNED	STR LOST	STR RECALL
ANS-WS	ANSind-WS OVERDUE	ANSind-WS RETURNED	ANSind-WS LOST	ANSind-WS RECALL
ANS-WS repeat	ANSind-WS OVERDUE	ANSind-WS RETURNED	ANSind-WS LOST	ANSind-WS RECALL
ANS-HP	ANSind-HP OVERDUE	ANSind-HP RETURNED	ANSind-HP LOST	ANSind-HP RECALL
ANS-HP repeat	ANSind-HP OVERDUE	ANSind-HP RETURNED	ANSind-HP LOST	ANSind-HP RECALL
CAR -	CARind - OVERDUE	CARind - RETURNED	CARind - LOST	CARind - RECALL
CAR - repeat	CARind- OVERDUE	CARind - RETURNED	CARind - LOST	CARind - RECALL
SHI	SHIind OVERDUE	SHIind RETURNED	SHIind LOST	SHIind RECALL
SHI repeat	SHIind OVERDUE	SHIind RETURNED	SHIind LOST	SHIind RECALL
RCL	RCLind RECALL	RCLind RETURNED	RCLind LOST	RCLind RECALL
RCL repeat		RCLind RETURNED	RCLind LOST	RCLind RECALL

Table A.5b Requester State Table -Tracking Phase (Part 2)

	OVERDUE	RETURNED	LOST	RECALL
DUE	DUEind OVERDUE	DUEind RETURNED	DUEind LOST	DUEind RECALL
DUE repeat	DUEind OVERDUE	DUEind RETURNED	DUEind LOST	DUEind RECALL
LST		LSTind LOST	LSTind LOST	LSTind LOST
LST repeat			LSTind LOST	
DAM		DAMind RETURNED		
MSG	MSGind OVERDUE	MSGind RETURNED	MSGind LOST	MSGind RECALL
STQ	STQind OVERDUE	STQind RETURNED	STQind LOST	STQind RECALL
STR	STRind OVERDUE	STRind RETURNED	STRind LOST	STRind RECALL
REA +		REAind + RETURNED	REAind + LOST	REAind + RECALL
REA + repeat		REAind + RETURNED	REAind + LOST	REAind + RECALL
REA -	REAind - OVERDUE	REAind - RETURNED	REAind - LOST	REAind - RECALL
REA - repeat	REAind - OVERDUE	REAind - RETURNED	REAind - LOST	REAind - RECALL
CHK	CHKind RETURNED	CHKind RETURNED		CHKind RETURNED
CHK repeat		CHKind RETURNED		