T10 02 – 203r1 SAS Link & Port Control Request-Conformation List

R-REQUEST, C-CONFIRMATION, P-PARAMETER, RC-REASON CODE

State	Type	Request/Conformation	Reason

Red- Current Spec Parameter; Black – Current Spec Wording; Blue- Change to Spec

SAS Link Layer to Port Layer Communication

SL0;	R,P	Open Connection	Port layer request link layer to open a connection
SL1;Arb Sel	R,P	Stop Arb	Port layer request link layer to terminate arbitration
SL1;SL0	C,P;RC	Arb Lost; OPEN FAILED-WRONG DESTINATION	IF OPEN_REJECT(WRONG DESTINATION)
	C,P;RC	Arb Lost; OPEN FAILED-~~INVALID~~ LINK RATE NOT SUPPORTED	IF OPEN_REJECT(~~INVALID~~ LINK RATE NOT SUPPORTED)
	C,P;RC	Arb Lost; OPEN FAILED-~~INVALID~~ PROTOCOL ~~TYPE~~ NOT SUPPORTED)	IF OPEN_REJECT(~~INVALID~~ PROTOCOL ~~TYPE~~ NOT SUPPORTED)
	C,P;RC	Arb Lost; OPEN FAILED-RETRY	IF OPEN_REJECT(RETRY)
	C,P;RC	Arb Lost; OPEM FAILED-PATHWAY ~~BLOCKED~~ BUSY	IF OPEN_REJECT(PATHWAY ~~BLOCKED~~ BUSY)
	C,P;RC	Arb Lost; OPEN FAILED-NO DESTINATION	IF OPEN_REJECT(NO DESTINATION)
	C,P;RC	Arb Lost; OPEN FAILED-BAD DESTINATION	IF OPEN_REJECT(BAD DESTINATION)
	C,P;RC	Arb Lost; OPEN FAILED-STP RESOURCES BUSY	IF OPEN_REJECT(STP RESOURCES BUSY)
SL1;SL4	C,P;RC	Connection Opened; SOURCE OPENED-SSP ~~LINK OPENED~~	SSP LINK OPENED BY TX
	C,P;RC	Connection Opened; SOURCE OPENED-STP ~~LINK OPENED~~	STP LINK OPENED BY TX
	C,P;RC	Connection Opened; SOURCE OPENED-SMP ~~LINK OPENED~~	SMP LINK OPENED BY TX
SL1;SL6	C,P;RC	Arb Lost; ARBITRATION LOST-PORT LAYER REQUEST	Arbitration terminated due to port layer Stop Arb request
	C,P;RC	Arb Lost; ARBITRATION LOST-OPEN ~~TIME-OUT~~ TIMEOUT OCCURED	Arbitration terminated due to Open Timeout expired
SL1;SL7	C,P;RC	Arb Lost; ARBITRATION LOST-BREAK RECEIVED	BREAK received during arbitration
SL2;Sel	R,P	Reject Opens	Port layer request link layer to reject opens
	R;P	Accept Opens	Port layer request link layer to accept opens
SL2;SL0	C,P;RC	Connection Rejected; CONNECTION REJECTED-RETRY	Port layer request link layer to reject opens & open rcved
	C,P;RC	Connection Rejected; CONNECTION REJECTED-~~INVALID~~ PROTOCOL ~~TYPE~~ NOT SUPPORTED	Protocol in open frame not supported
	C,P;RC	Connection Rejected; CONNECTION REJECTED-WRONG DESTINATION	destination port in open frame not this SAS port
	C,P;RC	Connection Rejected; CONNECTION REJECTED-~~INVALID~~ LINK RATE NOT SUPPORTED	Link rate in open frame not supported
SL2;SL4	C,P;RC:O)	Connection Opened; DESTINATION OPENED-SSP ~~LINK OPENED~~	SSP LINK OPENED by the Receive path
	C,P;RC:O)	Connection Opened; DESTINATION OPENED-STP ~~LINK OPENED~~	STP LINK OPENED by the Receive path
	C,P;RC:O)	Connection Opened; DESTINATION OPENED-SMP ~~LINK OPENED~~	SMP LINK OPENED by the Receive path
SL2;SL7	C,P;RC	~~BREAK Rcv~~ Connection Closed; CONNECTION CLOSED-BREAK RECEIVED	A BREAK was received while connected
SL4: Connected			
SL4;SL7	C,P,RC	Connection Closed; CONNECTION CLOSED-BREAK RECEIVED	A BREAK was received while connected
SL5;D Wait			
SL5;SL0	C,P;RC	Connection Closed; CONNECTION CLOSED-NO ERRORS OCCURRED	CLOSE transmitted and received
SL5;SL6	C,P;~~RC~~	Close ~~Time-out~~ Timeout ; ~~CONNECTION CLOSED-CLOSE TIME-OUT~~	CLOSE timeout exceeded after CLOSE was transmitted
SL5;SL7	C,P;RC	~~BREAK Rcv~~Connection Closed; CONNECTION CLOSED-BREAK RECEIVED	A BREAK was received while trying to close
SL6;Bk Wait			
SL6;SL0	C,P;RC	~~Link Broke~~ Connection Closed; CONNECTION CLOSED-LINK BROKEN	BREAK timeout exceeded after a BREAK was transmitted

SSP Link Layer to Port ~~and Transport~~ Control Layer Communication ~~–~~ – signals directly pass through

SSP_R1; Rcv	C,P;RC	~~Destination ACK/NAK time-out; DONE(ACK/NAK timeout)~~	~~ACK/NAK timeout occurred after last transmit~~
		Done Timeout Received; DONE RECEIVED-ACK/NAK TIMEOUT	DONE received with ACK/NAK reason code
		~~Destination credit time-out; DONE(credit time-out)~~	~~Credit unavailable for 1 ms after last tx~~
		Done Timeout Received; DONE RECEIVED-CREDIT TIMEOUT	DONE received with credit timeout reason code
SSP_RF1;	C,P;	Protocol Violation;	discard frame-4 conditions but no reason codes
	C;P	Illegal Frame;	discard frame-consecutive SOF without intervening EOF
SSP_RF2;	C,P;RC	Frame Received~~; number ACK/NAK's txed equal to EOFs received~~ ACK/NAK BALANCED	frame successfully received
	C,P;RC	Frame Received~~; number ACK/NAK's txed not equal to EOFs received~~ ACK/NAK NOT BALANCED	frame successfully received
	C,P;RC	Failed Frame~~; frame error(i.e., CRC error)~~	frame unsuccessfully received
SSP_TF1	R,P;RC	Tx Frame; ~~Interlocked Frame~~ INTERLOCKED	Transmit an Interlocked frame
	R,P, RC	Tx Frame; non-Interlocked Frame NON-INTERLOCKED	Transmit a Non-Interlocked frame
	R,P	Close Connection;	

SSP_TF2	C,P	ACK/NAK ~~time out~~ Timeout:	An ACK or a Nak was not rcv within 1 ms from last fm tx
SSP_TF3	C,P	Credit Timeout:	Credit Timeout since last Tx
SSP_TF5	C,P	DONE Transmitted;	a Done was transmitted to close the transmit state
SSP_D1	C,P	DONE Timeout:	A DONE was not received within 1 ms of a DONE tx
SSP_TIM1	C,P	ACK Received	An ACK was just received (for a frame transmitted)
	C,P	NAK Received	A NAK was just received (for a frame transmitted)