FAN Implementation Poll

1.1	Company Name	Cisco Systems
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	Vendor Category	**Yes / No**
2.1	Silicon Vendor	
2.2	Module Vendor	
2.3	Product Vendor	Yes

Questionnaire

3	Do you plan to implement the Wi-SUN FAN Profile?	Yes

If your answer for Item 3 is Yes, then please complete the Feature Set worksheet.

					Vendor Support
PICS Item	**TPS 1v29 Reference**	**Feature**	**Mandatory (M) / Optional (O)**	**Requirements**	**Implemented (Y/N/NA)**
	5.1	**Device Type**			
DT1	5.1	Device is a border router (6LBR)	O.1		**N**
DT2	5.1	Device is a router	O.1		**Y**
DT3	5.1	Device is a leaf node	O.1		**NA FAN 1**
	6.1	**Transport Layer**			
TL1	6.1.1.1	UDP	M		Y
TL2	6.1.1.2	TCP	O		N
	6.2	**Network Layer**			
NL1	6.2.3	IPV6	M		Y
NL1-1	6.2.3		DT1:M DT2:N/A DT3:N/A	Border Router's WAN interface MUST support the IPv6 MTU of 1280 bytes	NA
NL1-2	6.2.3		M	A FAN node's MPX-IE upper layer fragment MUST support an MTU of 1576 bytes	Y
NL2	6.2.3	L2 Routing	O		N
NL3	6.2.3	L3 Routing	M		Y
NL4	6.2.3	Simultaneously operate just one of L2 or L3 routing	M		Y
NL5	6.2.3	L3 Routing in operation	O.2		Y

NL6	6.2.3.1.1	6LoWPAN support for L3 Routing	NL5:M	DUT implements all mandatory (MUST, MUST NOT) requirements of this TPS section which are specific to the DUT's operating role (DT1, DT2, or DT3).	Y
NL7	6.2.3.1.2	IPV6 Addressing for L3 Routing	NL5:M		Y
NL7-1	6.2.3.1.2.1		NL5:M	Unicast address mapping as specified in [RFC4944] MUST be supported	Y
NL7-2	6.2.3.1.2.1.1		NL5:M	FAN nodes MUST auto configure a link-local IPv6 address as described in [RFC4862]	Y
NL7-3	6.2.3.1.2.1.2		NL5:M	The Interface Identifier (IID) MUST be of the modified EUI-64 format described [RFC4291], with the EUI-64 being that of the 802.15.4 FAN interface	Y
NL8	6.2.3.1.2.1.2	DHCPv6 support for L3 Routing	NL5:M	DUT implements all mandatory (MUST, MUST NOT) requirements of this TPS section which are specific to the DUT's operating role (DT1, DT2, or DT3).	Y
NL8-1	6.2.3.1.2.1.2		NL5:O	FAN nodes SHOULD NOT generate and MAY ignore receipt of Advertise, Rebind, Request, Renew, Release, Decline, Confirm, Reconfigure, and Information messages	N

NL8-2	6.2.3.1.2.1.2	NL5:O	An Option Request option MAY be included in the Solicit message. A Vendor Information option MAY be included in the Option Request option	N
NL8-3	6.2.3.1.2.1.2	NL5:O	A Status Code option MAY be included in the Reply message. Omission of the Status Code option indicates Success (see [RFC3315] section 22.13).	N
NL8-4	6.2.3.1.2.1.2	NL5:O	Vendor-specific Information options MAY be included in the Reply message	N
NL8-5	6.2.3.1.2.1.2	NL5:O	DHCP server initiated configuration exchanges are not supported and MAY be ignored	N
NL8-6	6.2.3.1.2.1.2	NL5:O	DHCP authentication messaging SHOULD NOT be generated and MAY be ignored on receipt	N
NL8-7	6.2.3.1.2.1.2	NL5:O	The following changes are made to default Transmission and Retransmission Parameters (section 5.5 of [RFC3315]) 1. SOL_MAX_DELAY SHOULD default to 1 min. 2. SOL_TIMEOUT SHOULD default to 1 min. 3. SOL_MAX_RT SHOULD default to 1 hour	N
NL8-8	6.2.3.1.2.1.2	NL5: O	FAN nodes MAY support additional GUA/ULA assignments.	N

NL9	6.2.3.1.2.2	Multicast for L3 Routing	NL5:M	DUT implements all mandatory (MUST, MUST NOT) requirements of this TPS section which are specific to the DUT's operating role (DT1, DT2, or DT3).	Y
NL9-1	6.2.3.1.2.2		NL5:O	FAN nodes MAY originate multicast ICMPv6 or UDP messaging.	N
NL9-2	6.2.3.1.2.2		NL5:O	Site and Global scope: 7. For each GUA/ULA acquired, a FAN node SHOULD subscribe to the equivalent unicast-prefix-based IPv6 multicast group (as described in [RFC3306]) supporting a MPL domain on that multicast address.	N
NL10	6.2.3.1.4	Neighbor Discovery support for L3 Routing	NL5:M	DUT implements all mandatory (MUST, MUST NOT) requirements of this TPS section which are specific to the DUT's operating role (DT1, DT2, or DT3).	Y
NL10-1	6.2.3.1.4		NL5:O	A FAN node MAY ignore potential neighbors which do not support the node’s channel function	N
NL11	6.2.3.1.5	ICMPv6 support for L3 Routing	NL5:M	DUT implements all mandatory (MUST, MUST NOT) requirements of this TPS section which are specific to the DUT's operating role (DT1, DT2, or DT3).	Y

NL12	6.2.3.1.6	L3 Route Establishment and Maintenance	NL5:M	DUT implements all mandatory (MUST, MUST NOT) requirements of this TPS section which are specific to the DUT's operating role (DT1, DT2, or DT3).	Y
NL13	6.2.3.1.6.1	L3 Routing Link Metrics	NL5:M	DUT implements all mandatory (MUST, MUST NOT) requirements of this TPS section which are specific to the DUT's operating role (DT1, DT2, or DT3).	Y
NL13-1	6.2.3.1.6.1		NL5:O	A node SHOULD refresh its neighbor link metrics at least every 30 minutes. In the absence of other messaging, a node SHOULD initiate NUD messaging to refresh its neighbor link metrics.	N
NL14	6.2.3.1.6.2	L3 Routing Objective Function	NL5:M	DUT implements all mandatory (MUST, MUST NOT) requirements of this TPS section which are specific to the DUT's operating role (DT1, DT2, or DT3).	Y
NL14-1	6.2.3.1.6.2		NL5:O	Using the ETX metric, the neighbor path cost SHOULD be calculated per the schedule guidance provided in [RFC6719] section 3.1	N
NL15	6.2.3.1.6.3	L3 Routing Upward Route Formation	NL5:M	DUT implements all mandatory (MUST, MUST NOT) requirements of this TPS section which are specific to the DUT's operating role (DT1, DT2, or DT3).	Y

NL15-1	6.2.3.1.6.3		NL5:O	A Prefix Information Option MAY be included to provide an IPv6 address prefix to the DODAG	N
NL15-2	6.2.3.1.6.3		NL5:O	6LoWPAN Context Option (6CO), as described in RFC [6775], MAY be implemented to support stateful context based source, destination, or multicast address compression.	N
NL15-3	6.2.3.1.6.3		NL5:O	FAN nodes MAY issue unicast or multicast DIS messages as described in [RFC6550] to solicit DIO messages.	N
NL15-4	6.2.3.1.6.3		NL5:O	A FAN node should determine a set of candidate parents as the set of all neighbor nodes, from which a DIO has been received, whose node-to-neighbor and neighbor-to-node RSL EWMA values both exceed the minimum threshold of CAND_PARENT_THRESHOLD using a hysteresis factor of CAND_PARENT_HYSTERISIS.	N
NL16	6.2.3.1.6.4	L3 Routing Downward Route Formation	NL5:M	DUT implements all mandatory (MUST, MUST NOT) requirements of this TPS section which are specific to the DUT's operating role (DT1, DT2, or DT3).	Y

NL16-1	6.2.3.1.6.4		NL5:O	FAN nodes SHOULD implement a binary exponential retransmission mechanism (as described in section 14 of [RFC3315]) until either the corresponding DAO-ACK is received or the retry mechanism has exhausted its maximum attempts.	N
NL17	6.2.3.1.7	Unicast Forwarding for L3 Routing	NL5:M	DUT implements all mandatory (MUST, MUST NOT) requirements of this TPS section which are specific to the DUT's operating role (DT1, DT2, or DT3).	Y
NL18	6.2.3.1.8	Multicast Forwarding for L3 Routing	NL5:M DT1:M DT2:M DT3:N/A	DUT implements all mandatory (MUST, MUST NOT) requirements of this TPS section which are specific to the DUT's operating role (DT1, DT2, or DT3).	Y
NL18-1	6.2.3.1.8		NL18:O	A FAN node MAY join its FAN interface to other realm-scope multicast groups.	N
NL19	6.2.3.2	L2 Mesh Network (L2M)	O.2		N
NL19-1	6.2.3.2.1	6LoWPAN support for L2 Routing	NL19: M		N
NL19-2	6.2.3.2.1		NL19: M	FAN nodes MUST implement Uncompressed IPv6 Headers as defined in [RFC 4944]	N
NL19-3	6.2.3.2.1	IPv6 addressing for L2 Routing	NL19: M		N
NL19-4	6.2.3.2.2.1.1		NL19: M	FAN nodes MUST auto configure a link-local IPv6 address as described in [RFC4862].	N

NL19-5	6.2.3.2.2.1.2		NL19: M	FAN nodes MUST acquire the prefix information from the MHDS-IE to provide automated generation of IPv6 GUA and ULA addresses	N
NL19-6	6.2.3.2.2.1.2		NL19:M	FAN nodes MUST support a total assignment of at least 2 GUA and/or ULA	N
NL19-7	6.2.3.2.2.4	Neighbor Discovery support for L2 Routing	NL19:M		N
NL19-8	6.2.3.2.2.4		NL19:M	Neighbor discovery, as described in Section 6.2.3.1.4 SHALL be implemented with the following modification: 1) Router Discovery using [RFC 6550] DIO and DIS messaging is not performed	N
NL19-9	6.2.3.2.2.5	ICMPv6 support for L2 Routing	NL19:M	DUT implements all mandatory (MUST, MUST NOT) requirements of this TPS section which are specific to the DUT's operating role (DT1, DT2, or DT3).	N
	6.3	**Data Link Layer**			
DL1	6.3.1.1	Configurable Parameters	M	Table 6 2a contains definitions of FAN Data Link Layer configuration parameters which MUST be administratively configurable on a node prior to the node’s deployment.	**Y**

DL2	6.3.2.1	Frame Formats	M	Only [IEEE802.15.4] Data and Enhanced Acknowledge frames are used. Other frame types SHOULD be discarded and the device MUST continue normal operation	**Y**
DL3	6.3.2.1.1	Bit order of transmissions	M	DUT implements all mandatory (MUST, MUST NOT) requirements of this TPS section which are specific to the DUT's operating role (DT1, DT2, or DT3).	**Y**
DL4	6.3.2.1.2	PAN Advertisement Frame	DT1:M DT2:M		**Y**
DL5	6.3.2.1.3	PAN Advertisement Solicit Frame	DT2:M DT3:M		**Y**
DL6	6.3.2.1.4	PAN Configuration Frame	DT1:M DT2:M		**Y**
DL7	6.3.2.1.5	PAN Configuration Solicit Frame	DT2:M DT3:M		**Y**
DL8	6.3.2.1.6	ULAD Frame	M		**Y**
DL9	6.3.2.1.7	Acknowledgement Frame	M		**Y**
DL10	6.3.2.1.8	EAPOL Frame	M		**Y**
DL11	6.3.2.2	Key Data Cryptographic Elements	M		**Y**
DL12	6.3.2.2.1	PMKID	M		**Y**
DL13	6.3.2.2.2	PTKID	M		**Y**
DL14	6.3.2.2.3	GTKL	M		**Y**
DL15	6.3.2.2.4	GTKL	M		**Y**
DL16	6.3.2.2.5	Lifetime KDE	M		**Y**

DL17	6.3.2.3	Information Elements	O	If an IE not defined by this specification is encountered in a frame, that IE MAY be ignored and the rest of the frame MUST be processed as normal including any additional IEs.	Y
DL18	6.3.2.3.1	Wi-SUN Header Information Elements			
DL19	6.3.2.3.1.1	UTT-IE	M	DUT implements all mandatory (MUST, MUST NOT) requirements of this TPS section which are specific to the DUT's operating role (DT1, DT2, or DT3).	Y
DL20	6.3.2.3.1.2	BT-IE	M	DUT implements all mandatory (MUST, MUST NOT) requirements of this TPS section which are specific to the DUT's operating role (DT1, DT2, or DT3).	Y
DL21	6.3.2.3.1.3	FC-IE	M	DUT implements all mandatory (MUST, MUST NOT) requirements of this TPS section which are specific to the DUT's operating role (DT1, DT2, or DT3).	Y
DL22	6.3.2.3.1.4	RSL-IE	M	DUT implements all mandatory (MUST, MUST NOT) requirements of this TPS section which are specific to the DUT's operating role (DT1, DT2, or DT3).	Y
DL23	6.3.2.3.1.5	MHDS-IE	NL19: M	DUT implements all mandatory (MUST, MUST NOT) requirements of this TPS section which are specific to the DUT's operating role (DT1, DT2, or DT3).	N
DL24	6.3.2.3.1.6	VH-IE	O		N

DL25	6.3.2.3.1.7	EA-IE	M	DUT implements all mandatory (MUST, MUST NOT) requirements of this TPS section which are specific to the DUT's operating role (DT1, DT2, or DT3).	Y
DL26	6.3.2.3.2	Wi-SUN Payload Information Elements			
DL27	6.3.2.3.2.1.1	US-IE	M	DUT implements all mandatory (MUST, MUST NOT) requirements of this TPS section which are specific to the DUT's operating role (DT1, DT2, or DT3).	Y
DL28	6.3.2.3.2.1.2	BS-IE	M	DUT implements all mandatory (MUST, MUST NOT) requirements of this TPS section which are specific to the DUT's operating role (DT1, DT2, or DT3).	Y
DL29	6.3.2.3.2.2	VP-IE	O		N
DL30	6.3.2.3.2.3	PAN-IE	M	DUT implements all mandatory (MUST, MUST NOT) requirements of this TPS section which are specific to the DUT's operating role (DT1, DT2, or DT3).	Y
DL31	6.3.2.3.2.4	NETNAME-IE	M	DUT implements all mandatory (MUST, MUST NOT) requirements of this TPS section which are specific to the DUT's operating role (DT1, DT2, or DT3).	Y
DL32	6.3.2.3.2.5	PANVER-IE	M	DUT implements all mandatory (MUST, MUST NOT) requirements of this TPS section which are specific to the DUT's operating role (DT1, DT2, or DT3).	Y

DL33	6.3.2.3.2.6	GTKHASH-IE	M	DUT implements all mandatory (MUST, MUST NOT) requirements of this TPS section which are specific to the DUT's operating role (DT1, DT2, or DT3).	Y
DL34	6.3.2.3.3	MPX-IE	M	DUT implements all mandatory (MUST, MUST NOT) requirements of this TPS section which are specific to the DUT's operating role (DT1, DT2, or DT3).	Y
DL34-1	6.3.2.3.3		O	First, Middle, and Last fragment are OPTIONAL and MAY be supported. a. A node supporting these Transfer types MUST also support reception of the Abort Transfer type. b. A node not supporting these Transfer types MUST support generation of the Abort Transfer type with Total Upper-Layer Frame Size set to 0.	N

DL34-2	6.3.2.3.3		O	The layer 2 fragmentation capabilities of the MPX-IE MAY be supported	N
DL35	6.3.3.1	Protocol Dispatch	M	The MPX-IE Multiplex ID MUST be set to one of the values described in Table 6 3.	Y
DL36	6.3.2.3.4	Frame Requirements and IE's	M	DUT implements all mandatory (MUST, MUST NOT) requirements of this TPS section which are specific to the DUT's operating role (DT1, DT2, or DT3).	Y
DL36-1	6.3.2.3.4		O	all Information Elements defined by this specification SHOULD be accepted in received frames even if the table indicates they are not to be included (allowing for future revisions). Received frames that do not include the required Information Elements from this table SHOULD be dropped.	N
DL36-2	6.3.2.3.4		O	Zero or more MPX-IEs are allowed	N
DL36-3	6.3.2.3.4		O	Zero or more VH-IEs are allowed, but there SHOULD NOT be more than 1 VH-IE containing the same vendor OUI	N
DL36-4	6.3.2.3.4		O	Zero or more VP-IEs are allowed, but there SHOULD NOT be more than 1 VP-IE containing the same vendor OUI.	N

DL35	6.3.2.4	L2 Mesh Frame Formats	NL19: M	DUT implements all mandatory (MUST, MUST NOT) requirements of this TPS section and all sub-sections which are specific to the DUT's operating role (DT1, DT2, or DT3).	N
DL36	6.3.3.1	Protocol Dispatch Operation	M	All upper layer payload transfers are encapsulated within an MPX-IE. FAN nodes MUST implement protocol dispatch by populating (frame transmission) or processing (frame reception) the Multiplex ID of the MPX-IE.	Y
DL37	6.3.3.2	L2 Mesh Operation	NL19: M	DUT implements all mandatory (MUST, MUST NOT) requirements of this TPS section which are specific to the DUT's operating role (DT1, DT2, or DT3).	N
DL38	6.3.3.2.1	Construct MHD-HDR	DL37:M	DUT implements all mandatory (MUST, MUST NOT) requirements of this TPS section which are specific to the DUT's operating role (DT1, DT2, or DT3).	N
DL39	6.3.3.2.2	Forward MHD-PDU	DL37:M	DUT implements all mandatory (MUST, MUST NOT) requirements of this TPS section which are specific to the DUT's operating role (DT1, DT2, or DT3).	N
DL40	6.3.3.2.3	MHD-PDU Reception	DL37:M	DUT implements all mandatory (MUST, MUST NOT) requirements of this TPS section which are specific to the DUT's operating role (DT1, DT2, or DT3).	N

DL41	6.3.3.2.4	MHD-PDU Transmission	DL37:M	DUT implements all mandatory (MUST, MUST NOT) requirements of this TPS section which are specific to the DUT's operating role (DT1, DT2, or DT3).	N
DL42	6.3.3.2.5	RAMP procedures	DL37:M		N
DL43	6.3.3.2.5.1	Local Broadcast	DL37:M	DUT implements all mandatory (MUST, MUST NOT) requirements of this TPS section which are specific to the DUT's operating role (DT1, DT2, or DT3).	N
DL44	6.3.3.2.5.2	Periodic RAMP actions	DL37:M		N
DL45	6.3.3.2.5.3	Route Information Update	DL37:M	DUT implements all mandatory (MUST, MUST NOT) requirements of this TPS section which are specific to the DUT's operating role (DT1, DT2, or DT3).	N
DL46	6.3.3.2.5.4	Generation of RTA Data Element	DL37:M	DUT implements all mandatory (MUST, MUST NOT) requirements of this TPS section which are specific to the DUT's operating role (DT1, DT2, or DT3).	N
DL47	6.3.3.2.5.5	Generation of RTR MHD-PDU	DL37:M	DUT implements all mandatory (MUST, MUST NOT) requirements of this TPS section which are specific to the DUT's operating role (DT1, DT2, or DT3).	N
DL48	6.3.3.2.5.6	Generation of SREG MHD-PDU	DL37:M	DUT implements all mandatory (MUST, MUST NOT) requirements of this TPS section which are specific to the DUT's operating role (DT1, DT2, or DT3).	N

DL49	6.3.3.2.5.7	Generation of SREG-ACK MHD-PDU	DL37:M	DUT implements all mandatory (MUST, MUST NOT) requirements of this TPS section which are specific to the DUT's operating role (DT1, DT2, or DT3).	N
DL50	6.3.3.2.5.8	Generation of SREG-NACK MHD-PDU	DL37:M	DUT implements all mandatory (MUST, MUST NOT) requirements of this TPS section which are specific to the DUT's operating role (DT1, DT2, or DT3).	N
DL51	6.3.3.2.5.9	Generation of RTR-REQ MHD-PDU	DL37:M	DUT implements all mandatory (MUST, MUST NOT) requirements of this TPS section which are specific to the DUT's operating role (DT1, DT2, or DT3).	N
DL52	6.3.3.2.6	RAMP reception procedures	DL37:M		N
DL53	6.3.3.2.6.1	RTA Data Element	DL37:M	DUT implements all mandatory (MUST, MUST NOT) requirements of this TPS section which are specific to the DUT's operating role (DT1, DT2, or DT3).	N
DL54	6.3.3.2.6.2	SREG Data Element	DL37:M	DUT implements all mandatory	N
DL55	6.3.3.2.6.3	SREG-ACK Data Element	DL37:M	DUT implements all mandatory (MUST, MUST NOT) requirements of this TPS section which are specific to the DUT's operating role (DT1, DT2, or DT3).	N
DL56	6.3.3.2.6.4	SREG-NACK Data Element	DL37:M	DUT implements all mandatory (MUST, MUST NOT) requirements of this TPS section which are specific to the DUT's operating role (DT1, DT2, or DT3).	N

DL57	6.3.3.2.6.5	RTA-REQ Data Element	DL37:M	DUT implements all mandatory (MUST, MUST NOT) requirements of this TPS section which are specific to the DUT's operating role (DT1, DT2, or DT3).	N
DL58	6.3.3.2.6.6	RTR Data Element	DL37:M	DUT implements all mandatory (MUST, MUST NOT) requirements of this TPS section which are specific to the DUT's operating role (DT1, DT2, or DT3).	N
DL59	6.3.3.2.7	RAMP Transmission Procedures	DL37:M		N
DL60	6.3.3.2.7.1	Route Announcement	DL37:M	DUT implements all mandatory (MUST, MUST NOT) requirements of this TPS section which are specific to the DUT's operating role (DT1, DT2, or DT3).	N
DL61	6.3.3.2.7.2	Route Removal	DL37:M	DUT implements all mandatory (MUST, MUST NOT) requirements of this TPS section which are specific to the DUT's operating role (DT1, DT2, or DT3).	N
DL62	6.3.3.2.7.3	Service Registration	DL37:M	DUT implements all mandatory (MUST, MUST NOT) requirements of this TPS section which are specific to the DUT's operating role (DT1, DT2, or DT3).	N
DL63	6.3.3.2.7.4	Service Registration Response	DL37:M	DUT implements all mandatory (MUST, MUST NOT) requirements of this TPS section which are specific to the DUT's operating role (DT1, DT2, or DT3).	N

DL64	6.3.3.2.7.5	Service Registration Negative Response	DL37:M	DUT implements all mandatory (MUST, MUST NOT) requirements of this TPS section which are specific to the DUT's operating role (DT1, DT2, or DT3).	N
DL65	6.3.3.2.7.6	Route Announcement Request	DL37:M	DUT implements all mandatory (MUST, MUST NOT) requirements of this TPS section which are specific to the DUT's operating role (DT1, DT2, or DT3).	N
MAC1	6.3.4	MAC Operation			
MAC2	6.3.4.1	Channel Access	M	DUT implements all mandatory (MUST, MUST NOT) requirements of this TPS section which are specific to the DUT's operating role (DT1, DT2, or DT3).	Y
MAC3	6.3.4.1	Channel Access	O	CCA Mode 1 MAY be used before asynchronous frame transmissions. If CCA indicates a channel is busy then the channel MUST be skipped and the next channel in the frame transmission sequence attempted.	N
MAC4	6.3.4.2	Frame Exchange Patterns			
MAC4-1	6.3.4.2		O	If the node had transmitted an EDFE frame containing an FC-IE, or had transmitted a DFE frame requesting an ACK, the node SHOULD continue to listen for the continuation of the EDFE or DFE ACK on the same channel as the transmission.	N

MAC4-2	6.3.4.2		O	The node SHOULD next determine if it is within the dwell interval of its Broadcast Channel Hopping schedule and, if so, tune to the indicated broadcast channel.	N
MAC4-3	6.3.4.2		O	the node SHOULD tune to the channel indicated by its unicast listening schedule	N
MAC9	6.3.4.3.1	Unicast Frame Exchange	M	DUT implements all mandatory (MUST, MUST NOT) requirements of this TPS section which are specific to the DUT's operating role (DT1, DT2, or DT3).	Y
MAC10	6.3.4.3.1		O	FAN nodes MAY support initiation of EDFE	N
MAC11	6.3.4.3.1		O	Nodes MAY initiate ULAD frame exchange using DFE.	N
MAC12	6.3.4.3.1		O	Nodes MAY initiate ULAD frame exchange using EDFE.	N
MAC13	6.3.4.3.1		O	The Sequence Number SHOULD be initialized to a random value.	N
MAC15	6.3.4.3.1.1	Directed Frame Exchange	M	DUT implements all mandatory (MUST, MUST NOT) requirements of this TPS section which are specific to the DUT's operating role (DT1, DT2, or DT3).	Y
MAC17	6.3.4.3.1.1.1	DFE Retransmission	M	DUT implements all mandatory (MUST, MUST NOT) requirements of this TPS section which are specific to the DUT's operating role (DT1, DT2, or DT3).	Y

MAC19	6.3.4.3.1.2	Extended Directed Frame Exchange	M	DUT implements all mandatory (MUST, MUST NOT) requirements of this TPS section which are specific to the DUT's operating role (DT1, DT2, or DT3).	Y
MAC19-1	6.3.4.3.1.2		O	The Initial ULAD frame MAY include a MPX-IE and, if included, the Receive Flow Control field of the FC IE MUST NOT be set to zero.	N
MAC19-2	6.3.4.3.1.2		O	The Response ULAD frame MAY include a MPX-IE and, if included, the Receive Flow Control field of the FC-IE MUST NOT be set to zero.	N
MAC20	6.3.4.3.1.2.1	EDFE - Retransmission	M	DUT implements all mandatory (MUST, MUST NOT) requirements of this TPS section which are specific to the DUT's operating role (DT1, DT2, or DT3).	Y
MAC21	6.3.4.4.1	BFE - Broadcast Schedule Advertisement	M	DUT implements all mandatory (MUST, MUST NOT) requirements of this TPS section which are specific to the DUT's operating role (DT1, DT2, or DT3).	Y

MAC21-1	6.3.4.4.1		O	The BS-IE contents MAY be the same as the BS-IE (and the node's local BT IE identifying the same active BDI) received from the neighbor selected as preferred RPL parent. Alternately, the node may advertise a BS-IE and BT-IE with field values such that the declared BDI does not overlap that of its preferred RPL parent.	N
MAC21-2	6.3.4.4.2	BFE - Broadcast Frame Reception	M	DUT implements all mandatory (MUST, MUST NOT) requirements of this TPS section which are specific to the DUT's operating role (DT1, DT2, or DT3).	Y
MAC21-3	6.3.4.4.3	BFE - Broadcast Frame Transmission	M	DUT implements all mandatory (MUST, MUST NOT) requirements of this TPS section which are specific to the DUT's operating role (DT1, DT2, or DT3).	Y
MAC22	6.3.4.5	Frequency Hopping	M	DUT implements all mandatory (MUST, MUST NOT) requirements of this TPS section which are specific to the DUT's operating role (DT1, DT2, or DT3).	Y
MAC22-1	6.3.4.5		O	Frequency hopping MAY be implemented to meet other regulatory domain requirements specified in [PHYSPEC].	N

MAC22-2	6.3.4.5.1.1	Handling channel Exclusions	M	DUT implements all mandatory (MUST, MUST NOT) requirements of this TPS section which are specific to the DUT's operating role (DT1, DT2, or DT3).	Y
MAC22-3	6.3.4.5.1.1		O	A FAN node MAY advertise an excluded channel list for its listening schedule.	N
MAC22-4	6.3.4.5.1.2	TR51CF	O	This channel function, described in section 7.1 of [ANSITIA-4957.200], MAY be supported by FAN nodes.	N
MAC22-4.1	6.3.4.5.1.2		MAC22-4:M	TR51CF MUST be implemented per the additional details provided in Appendix A.	N
MAC22-4.2	6.3.4.5.1.2		MAC22-4:M	Random number generation as described in Appendix A MUST be used.	N
MAC22-5	6.3.4.5.1.3	DH1CF	M	DUT implements all mandatory (MUST, MUST NOT) requirements of this TPS section which are specific to the DUT's operating role (DT1, DT2, or DT3).	Y
MAC22-6	6.3.4.5.1.4	Fixed Channel	M	DUT implements all mandatory (MUST, MUST NOT) requirements of this TPS section which are specific to the DUT's operating role (DT1, DT2, or DT3).	Y
MAC22-7	6.3.4.5.1.5	Vendor Defined Channel Function	O		N
MAC23	6.3.4.6	FAN Discovery and Join			

MAC23-1	6.3.4.6.1	Usage of MLME-WS-ASYNC-FRAME	M	DUT implements all mandatory (MUST, MUST NOT) requirements of this TPS section which are specific to the DUT's operating role (DT1, DT2, or DT3).	Y
MAC23-2	6.3.4.6.2	Trickle Timers	M	DUT implements all mandatory (MUST, MUST NOT) requirements of this TPS section which are specific to the DUT's operating role (DT1, DT2, or DT3).	Y
MAC24	6.3.4.6.3	Discovery / Join Algorithm	M	DUT implements all mandatory (MUST, MUST NOT) requirements of this TPS section which are specific to the DUT's operating role (DT1, DT2, or DT3).	Y
MAC25	6.3.4.6.3.1	Join State 1: Select PAN	DT2:M DT3:M	DUT implements all mandatory (MUST, MUST NOT) requirements of this TPS section which are specific to the DUT's operating role (DT1, DT2, or DT3).	Y
MAC25-1	6.3.4.6.3.1		DT2:O DT3:O	The set of nodes from which a joining node accepts a PA constitutes the EAPOL candidate set , which SHOULD be further qualified by the RSSI level of the received PAs (see Appendix K	N
MAC26	6.3.4.6.3.2	Join State 2: Authenticate	DT2:M DT3:M	DUT implements all mandatory (MUST, MUST NOT) requirements of this TPS section which are specific to the DUT's operating role (DT1, DT2, or DT3).	Y

MAC26-1	6.3.4.6.3.2		DT2:O DT3:O	It is RECOMMMENDED that all key material acquired by the node be durably stored on the node (maintained across power cyclings).	N
MAC27	6.3.4.6.3.3	Join State 3: Acquire PAN Config	DT2:M DT3:M	DUT implements all mandatory (MUST, MUST NOT) requirements of this TPS section which are specific to the DUT's operating role (DT1, DT2, or DT3).	Y
MAC28	6.3.4.6.3.4	Join State 4: Configure Routing	M	DUT implements all mandatory (MUST, MUST NOT) requirements of this TPS section which are specific to the DUT's operating role (DT1, DT2, or DT3).	Y
MAC28-1	6.3.4.6.3.4.1		NL5:M	DUT implements all mandatory (MUST, MUST NOT) requirements of this TPS section which are specific to the DUT's operating role (DT1, DT2, or DT3).	Y
MAC28-2	6.3.4.6.3.4.2		NL19: M	DUT implements all mandatory (MUST, MUST NOT) requirements of this TPS section which are specific to the DUT's operating role (DT1, DT2, or DT3).	N
MAC31	6.3.4.6.3.5	Join State 5: Operational	M	DUT implements all mandatory (MUST, MUST NOT) requirements of this TPS section which are specific to the DUT's operating role (DT1, DT2, or DT3).	Y
	6.4	**PHY**			

PHY	6.4	PHY	M	DUT implements all mandatory (MUST, MUST NOT) requirements of this TPS section which are specific to the DUT's operating role (DT1, DT2, or DT3).	Y
	6.5	**Security**			
SEC1	6.5.1	Wi-SUN PKI	M	DUT implements all mandatory (MUST, MUST NOT) requirements of this TPS section which are specific to the DUT's operating role (DT1, DT2, or DT3).	Y
SEC1-1	6.5.1		O	A FAN manufacturer certificate chain MAY include one or more intermediate certificates.	Y
SEC1-2	6.5.1		O	A deployment security profile in which multiple PKI are accommodated, where a FAN node MAY either contain a Wi-SUN issued IDevID or a device certificate issued from a manufacturer's CA.	Y
SEC1-3	6.5.1		O	A deployment security profile in which a single PKI is used, where a FAN node MAY either contain a Wi-SUN issued IDevID or a device certificate issued from the manufacturer CA where all manufacturer CA roots MUST chain to the common Wi-SUN root of trust through cross-signing of the manufacturer CA root certificate.	N

SEC1-4	6.5.1		O	A FAN node MAY be issued or contain one or more LDevIDs	N
SEC2	6.5.1.1	Wi-SUN IDevId Construction	M	DUT implements all mandatory (MUST, MUST NOT) requirements of this TPS section which are specific to the DUT's operating role (DT1, DT2, or DT3).	Y
SEC2-1	6.5.1.1		O	The SubjectName field SHOULD be empty (it is ignored for the purposes of Wi-SUN path validation).	N
SEC2-2	6.5.1.1		O	The SANE MAY contain other names but these other names are ignored for the purposes of Wi-SUN path validation.	N
SEC2-3	6.5.1.1		O	KeyUsage MAY have keyAgreement	N
SEC2-4	6.5.1.1		O	ExtendedKeyUsage MAY contain	N
SEC2-5	6.5.1.1		O	A CertificatePolicies extension MAY	N
SEC3	6.5.2	FAN Access Control / Group Key placement	M	DUT implements all mandatory (MUST, MUST NOT) requirements of this TPS section which are specific to the DUT's operating role (DT1, DT2, or DT3).	Y
SEC4	6.5.2.1	EAPOL Over 802.15.4	M	DUT implements all mandatory (MUST, MUST NOT) requirements of this TPS section which are specific to the DUT's operating role (DT1, DT2, or DT3).	Y
SEC4-1	6.5.2.1		DT1:O	The Authentication Server MAY be hosted on the Border Router	N
SEC4-2	6.5.2.1		DT1:O	The Authentication Server MAY accessed by the Border over a WAN connection.	N

SEC5	6.5.2.1.1	SUP Operation	M	DUT implements all mandatory (MUST, MUST NOT) requirements of this TPS section which are specific to the DUT's operating role (DT1, DT2, or DT3).	Y
SEC6	6.5.2.1.2	Limits on Non Authenticated Node Messaging	M	DUT implements all mandatory (MUST, MUST NOT) requirements of this TPS section which are specific to the DUT's operating role (DT1, DT2, or DT3).	Y
SEC5-1	6.5.2.1.2		DT1:M DT2:M	An EAPOL target node SHOULD enforce rate limits upon EAPOL, PAS, and PA frames, incoming from non-authenticated nodes, to within reasonable bounds of the specified transmission rates of these frames.	Y
SEC7	6.5.2.1.3	EAPOL Relay Agent Operation	M	DUT implements all mandatory (MUST, MUST NOT) requirements of this TPS section which are specific to the DUT's operating role (DT1, DT2, or DT3).	Y
SEC7-1	6.2.2.1	EAPOL Relay Datagram	M	DUT implements all mandatory (MUST, MUST NOT) requirements of this TPS section which are specific to the DUT's operating role (DT1, DT2, or DT3).	Y
SEC8	6.5.2.1.4	Border Router / Authenticator Operation	M	DUT implements all mandatory (MUST, MUST NOT) requirements of this TPS section which are specific to the DUT's operating role (DT1, DT2, or DT3).	Y

SEC9	6.5.2.2	Authentication and PMK Installation Flow	M	DUT implements all mandatory (MUST, MUST NOT) requirements of this TPS section which are specific to the DUT's operating role (DT1, DT2, or DT3).	Y
SEC10	6.5.2.3	PTK and GTK Installation Flow	M	DUT implements all mandatory (MUST, MUST NOT) requirements of this TPS section which are specific to the DUT's operating role (DT1, DT2, or DT3).	Y
SEC11	6.5.2.4	Group Key Update Flow	M	DUT implements all mandatory (MUST, MUST NOT) requirements of this TPS section which are specific to the DUT's operating role (DT1, DT2, or DT3).	Y
SEC12	6.5.2.5	Revocation of Node Access	M	DUT implements all mandatory (MUST, MUST NOT) requirements of this TPS section which are specific to the DUT's operating role (DT1, DT2, or DT3).	Y
SEC13	6.5.3	N2N Authentication and Key Generation	O		N
SEC13-1	6.5.3		SEC13:M	DUT implements all mandatory (MUST, MUST NOT) requirements of this TPS section which are specific to the DUT's operating role (DT1, DT2, or DT3).	N
SEC13-2			SEC13:O	Either route over using ROLL RPL or mesh under using RAMP MAY employ Pairwise Authentication and Key Generation	N

SEC13-3			SEC13:O	A node configured to do pairwise security SHOULD attempt the certificate-based shared-secret initiation first and then fall back to the use of the abbreviated shared secret mechanism.	N
SEC14	6.5.3.2.1.1	DevID Certificates	SEC13:M	DUT implements all mandatory (MUST, MUST NOT) requirements of this TPS section which are specific to the DUT's operating role (DT1, DT2, or DT3).	N
SEC14-1			SEC13:O	All FAN nodes MAY receive one or more locally produced DevIDs - called LDevIDs. In general, the content of those 2943 certificates SHOULD be identical to that of the node's IDevID with the exception of the IssuerName field, the 2944 AuthorityKeyIdentifier extension and the expiration times. An LDevID MAY have additional extensions which 2945 provide context for the use of the LDevID within a Wi-SUN mesh	N
SEC15	6.5.3.2.1.2	Roots of Trust	SEC13:O	Each enrolled FAN node SHOULD contain the local trust anchor information necessary to resolve chains of trust for proffered LDevID certificates	N

SEC16	6.5.3.4.2.4	Session Data	SEC13:M	DUT implements all mandatory (MUST, MUST NOT) requirements of this TPS section which are specific to the DUT's operating role (DT1, DT2, or DT3).	N
SEC17	6.5.3.4.3	Cipher Suites	SEC13:M	DUT implements all mandatory (MUST, MUST NOT) requirements of this TPS section which are specific to the DUT's operating role (DT1, DT2, or DT3).	N
SEC18	6.5.3.4.3.2	Interoperability	SEC13:M	DUT implements all mandatory (MUST, MUST NOT) requirements of this TPS section which are specific to the DUT's operating role (DT1, DT2, or DT3).	N
SEC19	6.5.3.4.3.4	HMAC Key Size	SEC13:M	DUT implements all mandatory (MUST, MUST NOT) requirements of this TPS section which are specific to the DUT's operating role (DT1, DT2, or DT3).	N
SEC20	6.5.3.4.4.1	CCM - Counter Mode with Cipher Block Chaining MAC	SEC13:M	DUT implements all mandatory (MUST, MUST NOT) requirements of this TPS section which are specific to the DUT's operating role (DT1, DT2, or DT3).	N
SEC21	6.5.3.4.5.1	Key Derivation Functions Using Counter Mode	SEC13:M	DUT implements all mandatory (MUST, MUST NOT) requirements of this TPS section which are specific to the DUT's operating role (DT1, DT2, or DT3).	N

SEC22	6.5.3.4.6.1.1	NewAssociation	SEC13:M	DUT implements all mandatory (MUST, MUST NOT) requirements of this TPS section which are specific to the DUT's operating role (DT1, DT2, or DT3).	N
SEC23	6.5.3.6.2.1	AssociationAck	SEC13:M	DUT implements all mandatory (MUST, MUST NOT) requirements of this TPS section which are specific to the DUT's operating role (DT1, DT2, or DT3).	N
SEC24	6.5.3.4.6.3	NS Shared Secret Messages	SEC13:M	DUT implements all mandatory (MUST, MUST NOT) requirements of this TPS section which are specific to the DUT's operating role (DT1, DT2, or DT3).	N
SEC25	6.5.3.4.6.3.1	NS Shared Secret Initiation	SEC13:M	DUT implements all mandatory (MUST, MUST NOT) requirements of this TPS section which are specific to the DUT's operating role (DT1, DT2, or DT3).	N
SEC26	6.5.3.4.6.3.2	NS Shared Secret Response	SEC13:M	DUT implements all mandatory (MUST, MUST NOT) requirements of this TPS section which are specific to the DUT's operating role (DT1, DT2, or DT3).	N
SEC27	6.5.3.4.6.4.1	NS Session Created	SEC13:M	DUT implements all mandatory (MUST, MUST NOT) requirements of this TPS section which are specific to the DUT's operating role (DT1, DT2, or DT3).	N
SEC27-1			SEC13:O	If this message must be resent, it SHOULD be resent as sequence 1.	N

SEC28	6.5.3.4.6.4.2	NS Session Acknowledgement	SEC13:M	DUT implements all mandatory (MUST, MUST NOT) requirements of this TPS section which are specific to the DUT's operating role (DT1, DT2, or DT3).	N
SEC28-1			SEC13:O	If this message must be resent, it SHOULD be resent as sequence 1.	N
SEC29	6.5.3.4.6.4.3	NS Session Destruction	SEC13:M	DUT implements all mandatory (MUST, MUST NOT) requirements of this TPS section which are specific to the DUT's operating role (DT1, DT2, or DT3).	N
SEC30	6.5.3.4.5.6	Error	SEC13:M	DUT implements all mandatory (MUST, MUST NOT) requirements of this TPS section which are specific to the DUT's operating role (DT1, DT2, or DT3).	N
SEC30-1			SEC13:O	An error message MAY be sent with integrity protection once the sender has sent an NS Session Complete (Responder) or NS Session Acknowledgement (Initiator) message.	N
SEC31	6.5.3.4.8	PDU Processing using Pairwise Security	SEC13:M		N
SEC32	6.5.3.4.8.1	Data Elements	SEC13:M	DUT implements all mandatory (MUST, MUST NOT) requirements of this TPS section which are specific to the DUT's operating role (DT1, DT2, or DT3).	N

SEC33	6.5.3.4.8.2	Unicast Transmission Processing	SEC13:M	DUT implements all mandatory (MUST, MUST NOT) requirements of this TPS section which are specific to the DUT's operating role (DT1, DT2, or DT3).	N
SEC34	6.5.3.4.8.3	Unicast Reception Processing	SEC13:M	DUT implements all mandatory (MUST, MUST NOT) requirements of this TPS section which are specific to the DUT's operating role (DT1, DT2, or DT3).	N
SEC35	6.5.4	Frame Security	M	DUT implements all mandatory (MUST, MUST NOT) requirements of this TPS section which are specific to the DUT's operating role (DT1, DT2, or DT3).	Y
SEC36	6.5.4.1.1	Group AES Key (GAK)	M	DUT implements all mandatory (MUST, MUST NOT) requirements of this TPS section which are specific to the DUT's operating role (DT1, DT2, or DT3).	Y
SEC37	6.5.4.1.2	Pairwise AES Key (PAK)	SEC13:M	DUT implements all mandatory (MUST, MUST NOT) requirements of this TPS section which are specific to the DUT's operating role (DT1, DT2, or DT3).	N
SEC38	6.5.4.2	Auxiliary Security Header	M	DUT implements all mandatory (MUST, MUST NOT) requirements of this TPS section which are specific to the DUT's operating role (DT1, DT2, or DT3).	Y
SEC38-1	6.5.4.2		O	If the selected key is valid but other keys are determined to be invalid the node MAY proceed with frame transmission.	N

SEC39	6.5.4.3	CCM* Nonce and Frame Counter	M	DUT implements all mandatory (MUST, MUST NOT) requirements of this TPS section which are specific to the DUT's operating role (DT1, DT2, or DT3).	Y
SEC40	6.5.4.4	GTK Lifecycle	M	DUT implements all mandatory (MUST, MUST NOT) requirements of this TPS section which are specific to the DUT's operating role (DT1, DT2, or DT3).	Y
SEC41	6.5.5	Node Hardening	O	It is RECOMMENDED that FAN nodes implement platform hardening measures.	N

***** END *****

Color Coding Legend

Mandatory
Optional
Conditionally Mandatory or Optional