Finite State Machines of the On-Board Operations Scheduling Service

This appendix provides the finite state machines (FSMs) that model the behaviour of the on-board operations scheduling service of the Packet Utilization Standard (PUS). Since this service is very complex, these FSMs model a tailoring of the on-board operations scheduling service, considering that the schedule only supports two telecommands. If we considered a complete model, it would be very large.

Figure 1 shows the FSM of the normal behaviour of the on-board operations scheduling service.
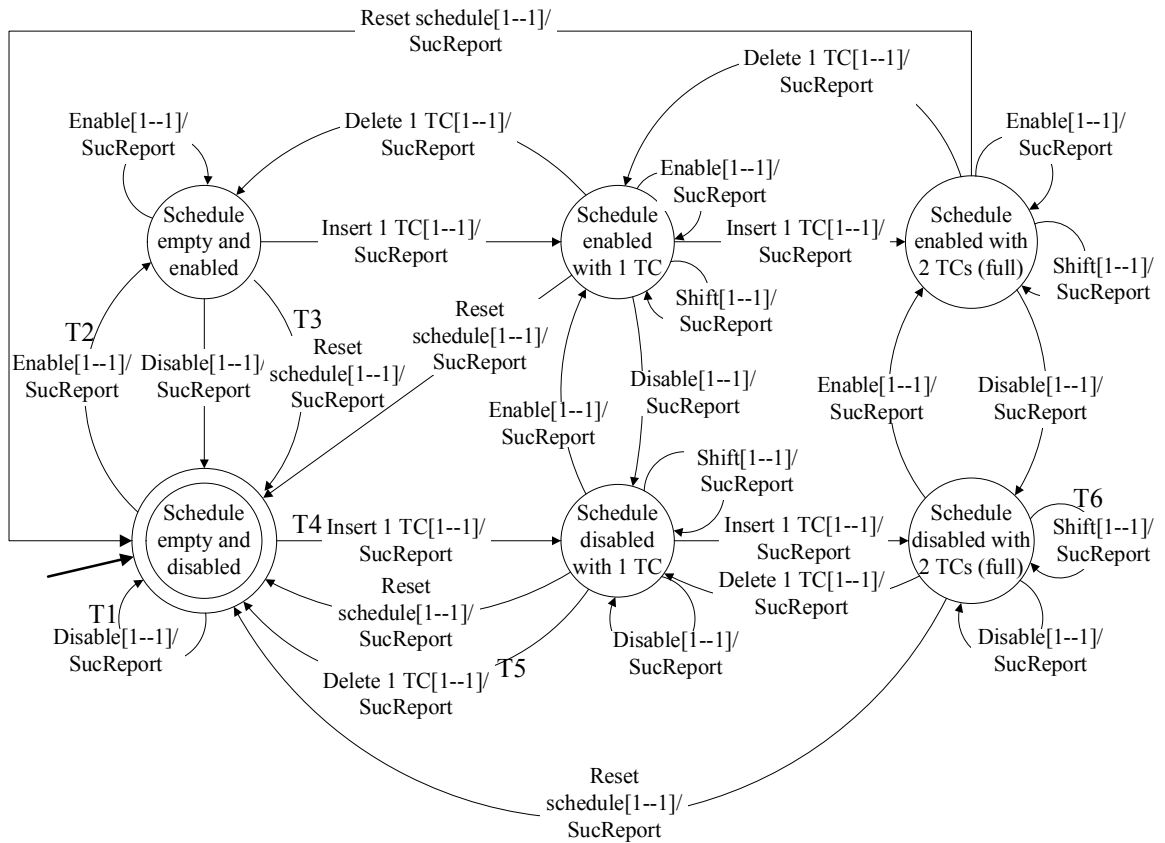

Figure 1. On-board operations scheduling service ó normal behaviour FSM.

The description of the meaning of each transition and its event/response relationship of the normal behaviour FSM is listed in Table 1.

Table 1. Description of the events and responses of the on-board operations scheduling service normal behaviour FSM

Transition	Event/Response	Meaning
T1	Disable[1--1]	It represents the request to disable the schedule. The "[1--1]" indicates that this request demands acknowledgment of acceptance and conclusion of execution of the telecommand
	SucReport	It represents the expected response of the service: the success report of acceptance and conclusion of execution
T2	Enable[1--1]	It represents the request to enable the schedule. The "[1--1]" indicates that this request demands acknowledgment of acceptance and conclusion of execution of the telecommand
	SucReport	It represents the expected response of the service: the success report of acceptance and conclusion of execution
T3	Reset schedule[1--1]	It represents the request to reset the schedule. The "[1--1]" indicates that this request demands acknowledgment of acceptance and conclusion of execution of the telecommand
	SucReport	It represents the expected response of the service: the success report of acceptance and conclusion of execution
T4	Insert 1 TC[1-1]	It represents the request to insert a TC in the schedule. The "[1--1]" indicates that this request demands acknowledgment of acceptance and conclusion of execution of the telecommand
	SucReport	It represents the expected response of the service: the success report of acceptance and conclusion of execution
T5	Delete 1 TC[1--1]	It represents the request to delete a TC from the schedule. The "[1--1]" indicates that this request demands acknowledgment of acceptance and conclusion of execution of the telecommand
	SucReport	It represents the expected response of the service: the success report of acceptance and conclusion of execution
T6	Shift[1--1]	It represents the request to shift all the TCs of the schedule. The "[1--1]" indicates that this request demands acknowledgment of acceptance and conclusion of execution of the telecommand
	SucReport	It represents the expected response of the service: the success report of acceptance and conclusion of execution

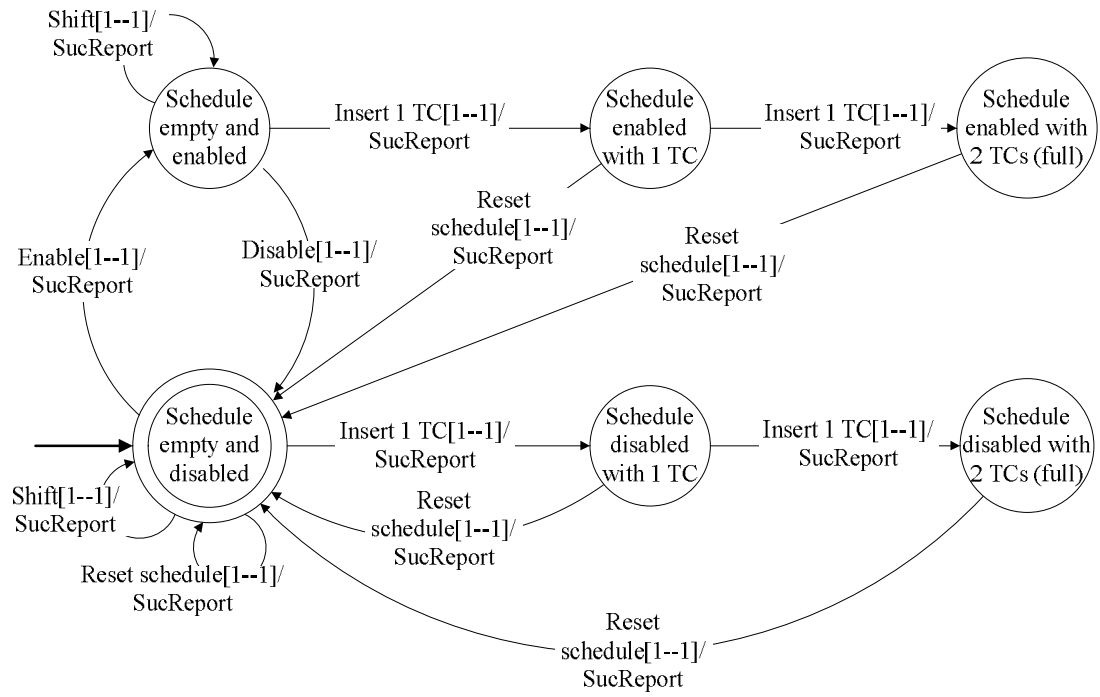Figure 2 shows the FSM of the sneak paths behaviour of the on-board operations scheduling service.

Figure 2. On-board operations scheduling service ó sneak paths FSM.

The meanings of the transitions of Figure 2 are the same of the transitions of Figure 1.