Use Case 1

The first use case used to evaluate the framework is defined as follows:

Table 1: Task set with long critical path

Task	**Execution Time (ms)**	**Type**	**Priority**	**Period**	**Dependency Set**
θ_1	15	Periodic	1	100	-
θ_2	20	Periodic	2	180	-
θ_3	25	Event-Driven	1	-	$\{\theta_1\}$
θ_4	30	Event-Driven	4	-	$\{\theta_3\}$
θ_5	20	Event-Driven	3	-	$\{\theta_4\}$
θ_6	35	Event-Driven	1	-	$\{\theta_5\}$
θ_7	40	Event-Driven	2	-	$\{\theta_6\}$
θ_8	25	Event-Driven	1	-	$\{\theta_7\}$
θ_9	30	Event-Driven	0	-	$\{\theta_8\}$
θ_{10}	20	Event-Driven	4	-	$\{\theta_9\}$
θ_{11}	45	Event-Driven	2	-	$\{\theta_{10}\}$
θ_{12}	30	Event-Driven	0	-	$\{\theta_{11}\}$
θ_{13}	35	Event-Driven	3	-	$\{\theta_{12}\}$
θ_{14}	25	Event-Driven	1	-	$\{\theta_{13}\}$
θ_{15}	40	Event-Driven	3	-	$\{\theta_{14}\}$
θ_{16}	20	Event-Driven	3	-	$\{\theta_{15}\}$
θ_{17}	50	Event-Driven	4	-	$\{\theta_{16}\}$
θ_{18}	25	Event-Driven	1	-	$\{\theta_{17}\}$
θ_{19}	35	Event-Driven	4	-	$\{\theta_{18}\}$
θ_{20}	30	Event-Driven	2	-	$\{\theta_{19}\}$

The generated Directed Acyclic Graph (DAG) based on Table 1 is shown in Fig. 1.

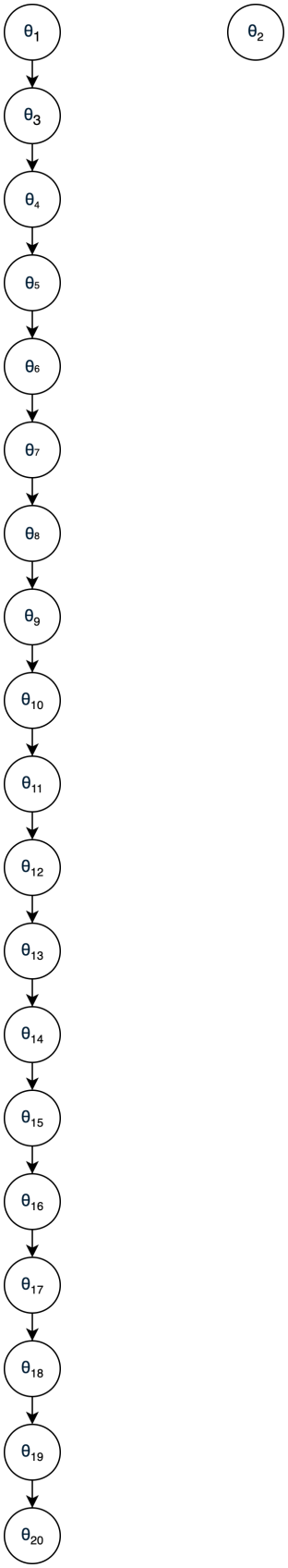

Fig. 1: Task set with long critical path