
MODULE *MC_GDPR_Time*

EXTENDS *GDPR_Time*, *TLC*

Define finite sets for data subjects and data types.

$MC_DataSubjects \triangleq \{ \text{"erni"}, \text{"lisa"}, \text{"bert"} \}$

$MC_Data \triangleq \{ \text{"healthdata"}, \text{"emaildata"}, \text{"salarydata"}, \text{"traveldata"} \}$

$MC_MAX_TIME \triangleq [year \mapsto 2500, month \mapsto 12, day \mapsto 31, hour \mapsto 23, minute \mapsto 59]$

The set of initial events that the system will process.

All legal bases are now created by events.

$MC_InitialEvents \triangleq$

{

Corresponds to *legalObligation(erni, healthmanagement)*

[*type* \mapsto "StartContract",
time $\mapsto [year \mapsto 2025, month \mapsto 1, day \mapsto 1, hour \mapsto 0, minute \mapsto 0]$,
subject \mapsto "erni",
data \mapsto "healthdata",
end_time $\mapsto MC_MAX_TIME]$,

Corresponds to *contract(lisa, travelmanagement, 2501010800, 2791910800)*

[*type* \mapsto "StartContract",
time $\mapsto [year \mapsto 2501, month \mapsto 1, day \mapsto 1, hour \mapsto 8, minute \mapsto 0]$,
subject \mapsto "lisa",
data \mapsto "traveldata",
end_time $\mapsto MC_MAX_TIME]$,

Corresponds to *consent(erni, newslettermanagement, 2507120820)*

[*type* \mapsto "GiveConsent",
time $\mapsto [year \mapsto 2025, month \mapsto 7, day \mapsto 12, hour \mapsto 8, minute \mapsto 20]$,
subject \mapsto "erni",
data \mapsto "emaildata",
end_time $\mapsto MC_MAX_TIME]$,

Corresponds to a process start

[*type* \mapsto "StartProcessing",
time $\mapsto [year \mapsto 2025, month \mapsto 7, day \mapsto 12, hour \mapsto 8, minute \mapsto 25]$,
subject \mapsto "erni",
data \mapsto "emaildata",
end_time $\mapsto MC_MAX_TIME]$,

Corresponds to *consentWithdrawn(erni, newslettermanagement, 2507231035)*

[*type* \mapsto "WithdrawConsent",
time $\mapsto [year \mapsto 2025, month \mapsto 7, day \mapsto 23, hour \mapsto 10, minute \mapsto 35]$,
subject \mapsto "erni",
data \mapsto "emaildata",
end_time $\mapsto MC_MAX_TIME]$

}

$$MC_Init \triangleq$$

$$\wedge \text{currentTime} = \text{MinTime}(\text{InitialEvents})$$

$$\wedge \text{eventsToProcess} = \text{InitialEvents}$$

$$\wedge \text{activeProcesses} = \{\}$$

$$\wedge \text{activeLegalBases} = \{\}$$

$$\wedge \text{breachesInProgress} = \{\}$$

\ * Modification History
\ * Last modified *Thu Aug 28 01:54:54 CEST 2025* by *tianxiang.lu*
\ * Created *Mon Aug 11 01:12:30 CEST 2025* by *tianxiang.lu*