# Features

**1. Time & Scheduling**

* **Clock & Timetable**
  + **UManicClockPluginBPLibrary**: Set or advance in-game time (SetInGameClockTime, TickManicClockAndGet).
  + **FManicTime**: Defines day/hour/minute/second slots.
  + **UManicTimetableNodeBPLibrary**: Finds the active timetable slot for a given time.
  + **UManicServiceSetTimeKey** (BT Service): Updates Blackboard keys with the current time or an active slot name.
* **Day of the Week**
  + **UManicDayOfWeekBPLibrary**: Converts day numbers into weekday strings (e.g. 1 → “Monday”).
* **Time Events**
  + **UManicTimeEventBPLibrary**: Detect if current time has reached a target (daily or once-only triggers).

**2. AI Behaviour Tasks**

* **Find & Move**
  + **UManicFindActorInRegion**: Searches a radius for an actor of a specific class, checking a boolean property (e.g. bIsFree).
  + **UManicTaskFindSpotInArea**: Randomly picks a reachable point within a radius.
  + **UManicTaskGoToLocation**: Finds a random spot and moves there, re-trying if it times out.
  + **UManicTaskMoveToTarget**: Moves AI to a Blackboard actor or location, with obstacle checks.
* **Obstacle Avoidance & Stuck Detection**
  + **UManicObsAvoidance**: Offsets the AI’s goal if blocked, detects if it’s stuck, and fails if movement is impossible.
* **Actor Finding Variants**
  + **UManicTaskFindActor**: Finds the closest actor of a given class.
  + **UManicTaskFindFreeActor**: Similar to above, but ensures no other AI is targeting that actor.
* **Interaction**
  + **UManicInteract**: Executes a custom “PerformGenericAction” on the AI Controller and optionally waits.

**3. Dynamic Needs System**

* **UDynamicManicNeedsComponent**
  + Tracks multiple “needs” (e.g. hunger), each ticking up or down at a chosen rate.
  + Fires OnAnyNeedThresholdCrossed when a threshold is reached and OnAllNeedsUpdated every tick call.
  + Add/remove or adjust needs at runtime (AddNeed, RemoveNeedAtIndex, etc.).

**4. AI Controller**

* **AManicAiController**
  + Holds a ControllerTimetable array (alternative to the service’s internal timetable).
  + ActivityMap (string → soft object pointers).
  + **SetActivityKeyOnBlackboard**: Loads an actor from the map and sets it in a Blackboard key.
  + **PerformGenericAction**: A Blueprint event for AI-specific actions.