

Developer Guide - API Integration

The Expansion Bay API provides software-level integration for external accessory inserted into the Expansion Bay. Please go to **Settings > Expansion Bay > API access** in the Navimow app to accept the API Access Policy.

This document describes the data exchange protocol between the mower and your external accessory. For more details, you can refer to the two sample integration files (**expansion_bay_lib.zip** and **expansion_bay_demo.zip**).

1. Data Sent from Mower to Accessory (1Hz Frequency)

1.1 Protocol Version

Parameter	Range	Description
version	0–0xFF	Protocol version. Current version: 0x01.

Note:

- All values must conform to data type and range.
- Future versions may expand. Always check the protocol version first.

1.2 Mower Status (Mower_fsm)

Value	State
0	MOWER_SELF_CHECK
1	MOWER_STANDBY
2	MOWER_POWER_DOWN
3	MOWER_ERR_PROC
4	MOWER_LOW_POWER
5	MOWER_RUN
6	MOWER_EMERGENCY
7	MOWER_LIFT_UP

1.3 Device

Parameter	Value Range	Description
temp	-40° ~ 214°	Mower internal temperature
systemTimestamp	UTC format	Current system time
Blade	0 (OFF), 1 (ON)	Blade rotation
Gnss_quality	0 = Low (Blinking yellow) 1 = High (Solid blue)	N/A
WIFI	0 = OFF, 1 = ON	WiFi connection status
4G	0 = OFF, 1 = ON	4G connection status
Passageway	0 = Not passing through a channel 1 = Passing through a channel	N/A

1.4 Battery

Parameter	Value Range / Mapping	Description
chargestate	0–6 (see table below)	Charging status
capacity	0% – 100%	Battery percentage
bat_state	0 = Normal 1 = High temperature protection 2 = Low temperature protection	N/A

Charging Status:

- 0: Unknown
- 1: Not charging (not in the charging station)
- 2: Charging (in the station)
- 3: In the charging station, not charging

- 4: Precharge
- 5: End of charge (EOC)
- 6: Protection mode

1.5 Environment Info

Parameter	Value	Description
Light	0	Night
	1	Day
Animal	0	Person detected
	10	Hedgehog detected
	11	Dog detected
	12	Cat detected
	255	No animal detected
Weather	0	Rain expected in 10 min
	1	Snow expected expected in 10 min
	2	Hot weather expected in 10 min
	3	Storm forecast expected in 10 min

1.6 Mowing

Parameter	Unit	Description
Mowing_progress	%	Current mowing progress
wheelSpeedWx	0.001 rad/s	Angular velocity
wheelSpeedVx	0.001 m/s	Linear velocity
BladeSpeed	rpm	Blade rotation speed
Map_id	—	ID of a mowing zone
Map_area	m ²	Size of a mowing zone
longitude	—	Current longitude

latitude	—	Current latitude
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2. Control Commands from Accessory to Mower

The accessory can send commands to control specific mower actions:

Command	Value	Description
MOWER_STOP	0	Pause mowing
MOWER_MOW	1	Start/continue mowing
MOWER_BACK_TO_PILE	2	Return to charging station