

Message Overview

This implementation sends **6 messages** every 20 ms (50 Hz cycle). All use 29-bit extended IDs and 8 data bytes, conforming to SAE J1939.

Message table

ID (hex)	Name	PGN	Variable	Active bytes
0x0CF00400	EEC1 — Engine RPM	61444	rpm	3-4
0x0CFE6CEE	TCO1 — Vehicle speed	65132	vel	6-7
0x18FEEE00	ET1 — Engine temperature	65262	temp	0
0x18FEFC21	ZBR — Throttle	65276	gas	1
0x18FEAE0B	EBS — Air pressure	65198	aire1, aire2	2-3
0x18EEFF21	Heartbeat	—	—	all 0x00

29-bit ID structure

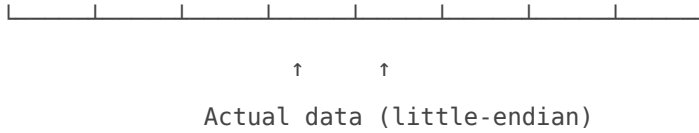
Every J1939 message ID encodes three fields:

Bits	Field	Description
28-26	Priority	0 (highest) to 7 (lowest)
25-8	PGN	Identifies the data type
7-0	SA	Source address — which ECU is sending

Byte convention

Unused bytes are always set to 0xFF, which in J1939 means **parameter not available** (SNA — Specific Not Available).





Send cycle

All 6 messages are sent sequentially every 20 ms:

```
void loop() {  
    // send all messages  
    // ...  
    delay(20); // 50 Hz  
}
```

Source addresses in use

SA (hex)	Decimal	ECU
0x00	0	Engine ECU (RPM, temperature)
0xEE	238	Tachograph ECU (speed)
0x21	33	Simulator node (throttle, heartbeat)
0x0B	11	EBS brake ECU (air pressure)

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