



Event Acknowledge Service Specification

Service# 9 NV

Version 1.1, March 2024, for Service version 1

Compatible with CBUS ® 4.0 Rev 8j

VLCB Event Acknowledgment Service Specification

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0.2 Document History

Date	Changed by	Summary of changes	Service version
20th January 2023	Ian Hogg M.5144	Initial document	1
14 April 2023	Ian Hogg M.5144	Changed name to VLCB	1

1 Introduction

This document describes the service related to Event Acknowledgement service and its use within VLCB. This is an optional service, which may be added to the MNS.

Please refer to the Event Teaching Service documentation for a description of the VLCB Event model.

While this service is described as a separate service, practically it can be implemented as a single library combined with the other event services. Since the event services have very similar needs, with facilities to characterise the events as producer, consumer, or both. In addition, Learning is intimately related to the definition, storage, and search functions included with Events; it is practical to implement them together.

In addition to the Status Messages, it is often useful, for monitoring or debugging purposes, to have an immediate record of the Event messages that a node consumes. If a node supports the EventAck service, and is successfully placed into ENACK Mode, the node may respond to each consumed event message by sending an ENACK message. This will be most useful for debugging of event configuration, but may also be useful for other purposes.

The event-acknowledge operation is activated by sending a MODE message setting the node's mode to ENACK, and the response messages may subsequently be turned off with a MODE Normal message. While in ENACK mode, all other operations of the module work the same as they do in Normal mode, i.e. it is a Normal+ mode.

1.1 Dependencies on other services

The Event Acknowledge service depends upon the mandatory Minimum Node Service and the Event Consumer Service which, in turn, depends upon the Event Teach Service.

2 Processing of events

As stated in the introduction, for events to be useful, two or more nodes have to agree on the meaning of a particular specific-event-number. This is done by 'teaching' the nodes to use the same specific-event-number so that the producer can send it on a specific change of state, and the consumers can use it to perform some resulting action.

When a module is in Event Ack mode an Event Acknowledge message is sent in response to consuming an Event message (eg ACON, ASON, etc.). This is useful for monitoring and debugging node configuration.

3 Power-on behaviour

At module power-on, modules shall not produce any events associated with their inputs or outputs.

Modules shall not preserve Event Ack mode but return to Normal mode.

4 Opcode Summary

Refer to the VLCB Opcode Specification document for details of the opcodes.

Request to Module	Module's Response	Use/meaning
MODE	GRSP	Enter or Exit Event Acknowledge mode
Any Event	ENACK	Acknowledgement of event

The MODE(Event Ack ON) command is used to turn on a module's event acknowledgement functionality. MODE(Event Ack OFF) command is used to disable the event acknowledgement.

Event acknowledgement is disabled by manufacturer defaults. Whether the Event Ack mode is enabled or disabled must be saved in non volatile memory and restored upon power up.

When a module is in Event Ack mode an Event Acknowledge message is sent in response to consuming an Event message (eg ACON, ASON, etc.).

ENACK(pNN, eventOpcode, NN, EN), where

- pNN is the node's node number,
- eventOpcode is the opcode of the event-message that triggered this response,
- NN:EN the original event that triggered this response.

5 Service specific Modes

Service	Code	Alias	Description	Comment
Event Ack	3	ENACK	Enables event acknowledge	Disabled by setting mode to Normal

6 Service Specific Status Codes

None.

7 Service Specific Diagnostic Data

7.1 DiagnosticCodes

The following DiagnosticCodes for the Event Acknowledge service are supported:

0x01: return the number of events acknowledged since power on.

7.2 Diagnostic Payload Data Return

The following RDGN diagnostic data numbers are specified by the Event services.

Diagnostic Code	Diagnostic Byte1	Diagnostic Byte2	Comment
0x01	Count Hi	Count Lo	Count of number of events acknowledged since power on

8 Service Specific Automatic Power-up Tests

No service specific power-up tests are specified by the Event services.

9 Service Documentation

Modules implementing any of the Event services must provide full documentation. In particular the following are required:

No additional requirements.

10 Service Data

10.1 ESD data bytes

Data1 = unused, set to 0

Data2 = unused, set to 0

Data3 = unused, set to 0