
Feature Specification for

SiESoCom

Controller & Events Archiver 'CEA'

2.2

REVISION HISTORY

DATE	WHO	VERSION	INFO
15 MARCH 2021	EP	1.0	CREATION
17 MARCH 2021	EP	1.1	CTRL MODELING UPDATE
17 MAY 2021	EP	2.0	REMOVE TIME SERIES ARCHIVER ROLE (MOVED TO ANOTHER COMPONENT), ADD DATASchema DASHBOARD REQUIREMENTS
10 JUNE 2021	EP	2.0.1	REMOVE DASHBOARD ROLE & BASELINE
10 JUNE 2021	EP	2.2	CLARIFY ACCOUNT CREATION LOGIG FOR AFE, AED, TSA AND RAF TIERS

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1 Context & System Topology

This document outlines the architecture and system requirements for the SiESoCom Controller/Events Archiver (CEA) application .

1.1 System topology views

The SiESoCom application is a multi-tier application which topology is depicted below. This specification deals with the Controller & Event Archiver (CEA) application tier(4)

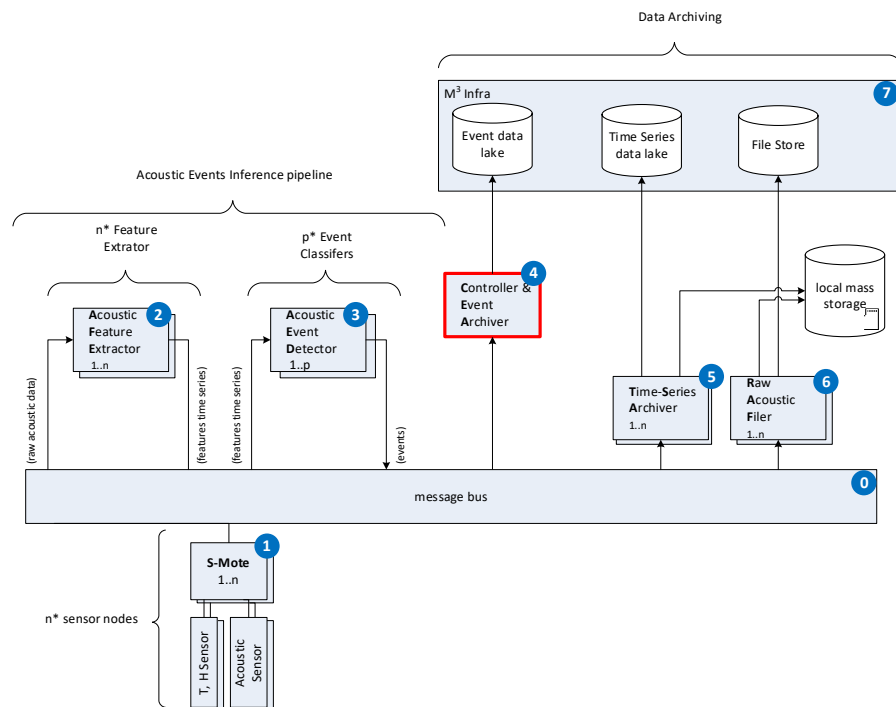


Fig: SiESoCom application topology - all tiers -

The SiESoCom CEA is a derivative /simplification of the M³ generic controller meant to

- (i) Create S-mote accounts on the message bus as the mote are beign attached to the setup
- (ii) Create app Tier accounts on the message bus as the containers are beign commissioned
- (iii) Upload acoustic events generated by the 'Acoustic Event Detectors' (AEDs) into M³ event data lake.

Note: The time-series aggregation function of the ancestor of this app (G-controller) is eliminated from the CEA and migrated to the time-series archiver (TAS) node (5)

2 Requirements

2.1 Event Occurrences Aggregation

The event occurrences reported by the AEDs of the setup are serialized with an Apache Avro data schema and published into different topics.

A list of all such topics, dataschemas and the commissioned events they transport is returned by a new Backend Service 'Get List of Event Occurrences outputs', specified in the API specification of the 'FAD Inference Pipeline' specification document.

The CEA shall subscribe to all the AED 'Event-Occurrence' topics and deserialize the payload before invoking the 'Event Occurrence create' API to archive the event into M³ event occurrence data lake.

Note: Once deserialized, the event occurrence payload is structured per the json described in the 'AED output' section of the 'FAD Inference Pipeline' specification document. The AEDs are designed to produce a payload that feature all the information expected to create an occurrence event, so the CEA processing on event occurrence is very limited.

3 CEA modeling

The CEA model shall include

- Application broker state & details
 - IP
 - Port
 - Security Mode
 - State

- Mote State Transitions

- AFE State Transitions
 - AED State Transitions
 - TSA State Transitions
 - RAF State Transitions

- Admin MQTT Account

Notes: "Mote State transition" , which is used to manage the mote application broker account is unchanged from the G-Controller implementation

"Admin MQTT account" , is unchanged from the G-Controller implementation

The SiESoCom application beign a multi-tier, scalable application, it is necessary to support multiple instances of any given tier. As far as the CEA is concerned, this means the CEA shall detect when a new tier instance is commissioned, creates its account on the message bus and inject its app mqtt creds into its config parameters.

This logic is the same than for motes.