



Case Study - Zerynth for SAP S/4HANA

Quality and Information
Security Management
Certified Company



ISO 9001
LL-C (Certification)



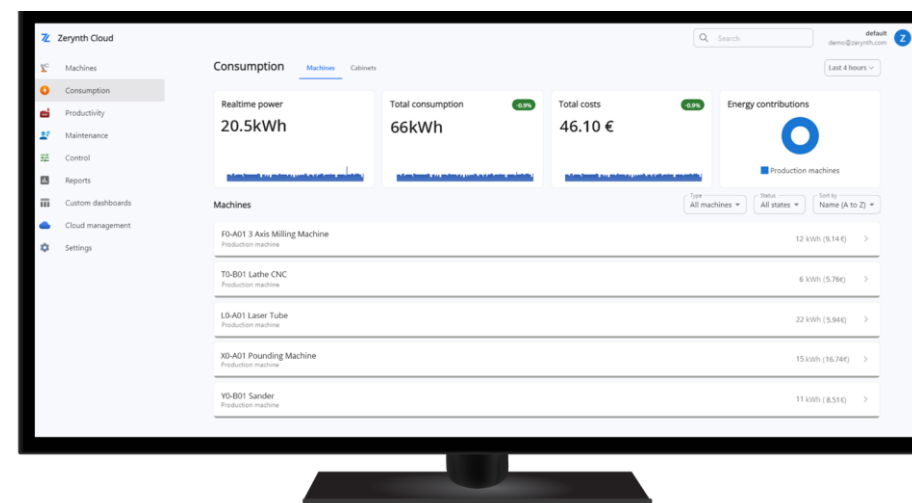
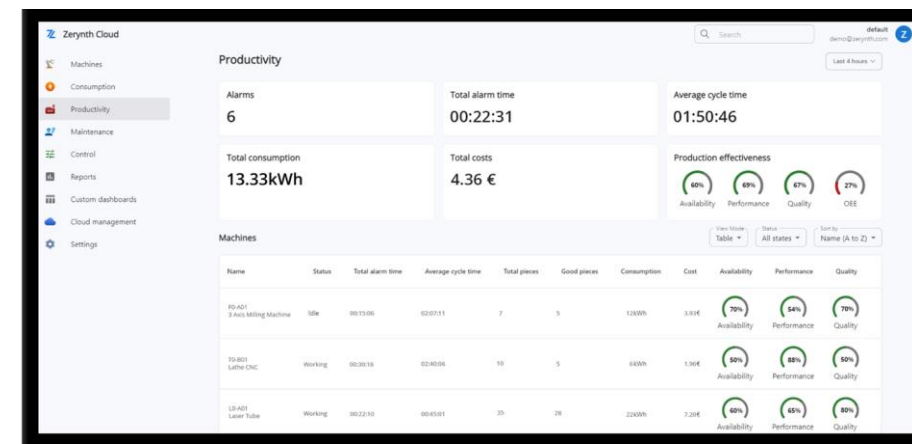
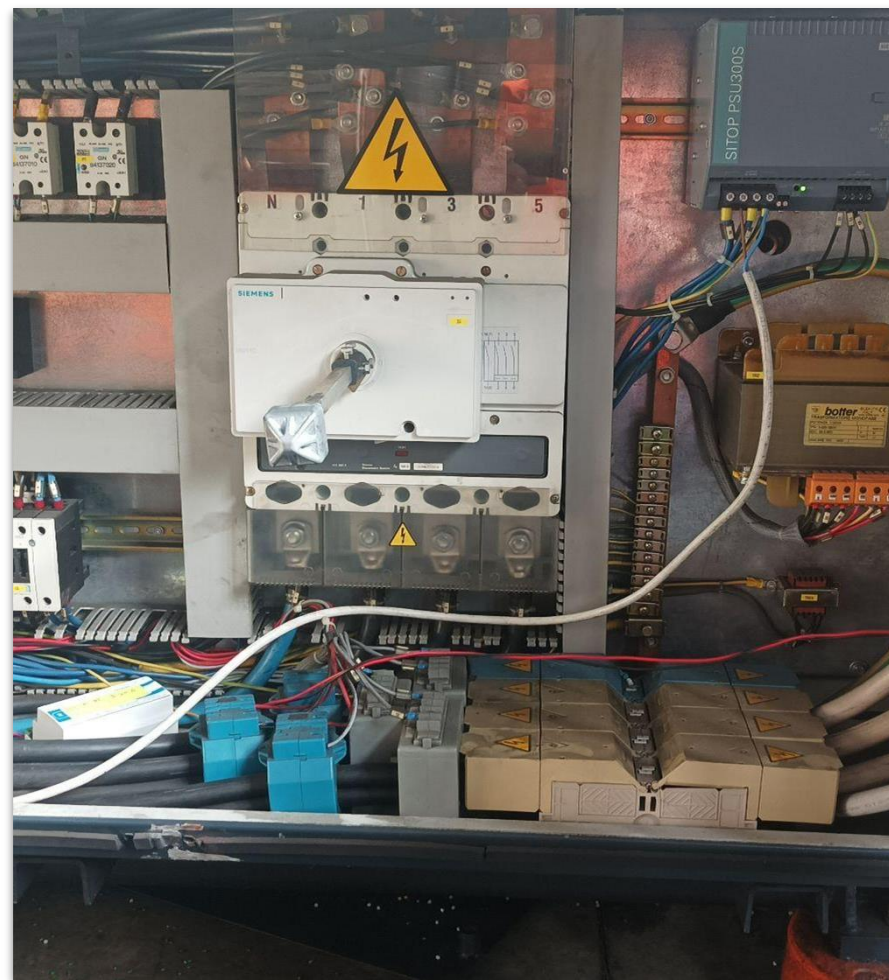
ISO 27001
LL-C (Certification)

website | www.zerynth.com



Case Study – Zerynth Industrial IoT & AI Platform with SAP

Industrial IoT technology from Zerynth integrated with SAP to add information about the cost and energy consumption of the machines, the operating status, and tracking of work orders



The Results

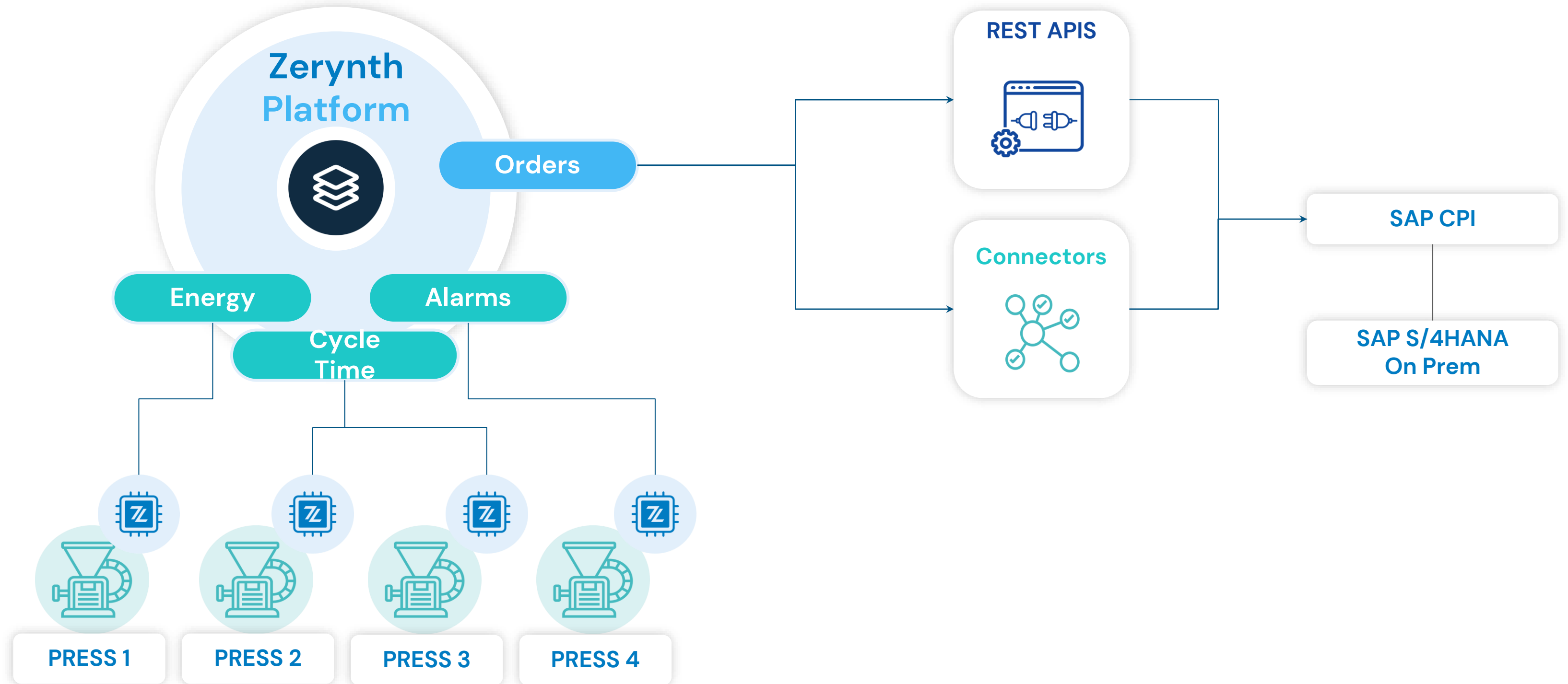
Enriched visibility across the entire shop floor

Automatic data collection

Leverage SAP products

Zerynth Platform integration with SAP – Architecture

A full-stack hardware-software 'edge platform' enables the seamless expansion of SAP products



Zerynth Platform – Edge Installation

Zerynth Edge Device

Digital IOs

Amperometric Sensors



Zerynth Platform – Edge Connection

Zerynth Cloud

- Machines
- Machine Monitoring
- Custom dashboards
- Cloud management
- Settings

Cloud management > Edge Devices > Pressa n44

Overview Jobs & FOTA Activity Console File system

Timestamp device ↓	Tag	Payload
4/4/2023, 4:56:31 PM	d	{ "ts":1680620190,"app":"mmon","p_stats":[51669.4,31625.9,84404.3],"e":{143.5
4/4/2023, 4:56:21 PM	d	{ "ts":1680620180,"app":"mmon","p_stats":[48034.4,36349.3,71466.4],"e":{133.4
4/4/2023, 4:56:11 PM	d	{ "ts":1680620170,"app":"mmon","p_stats":[57686.5,31625.9,147245],"e":{160.2
4/4/2023, 4:56:01 PM	d	{ "ts":1680620160,"app":"mmon","p_stats":[37417.2,29983,56680.2],"e":{103.93
4/4/2023, 4:55:51 PM	d	{ "ts":1680620150,"app":"mmon","p_stats":[47480,31215.2,65510.8],"e":{131.88
4/4/2023, 4:55:41 PM	d	{ "ts":1680620140,"app":"mmon","p_stats":[35199.2,30393.7,51546.2],"e":{97.77
4/4/2023, 4:55:31 PM	d	{ "ts":1680620130,"app":"mmon","p_stats":[53846.2,32652.7,72903.9],"e":{149.5
4/4/2023, 4:55:21 PM	d	{ "ts":1680620120,"app":"mmon","p_stats":[49020.2,39429.7,66332.3],"e":{136.1
4/4/2023, 4:55:11 PM	d	{ "ts":1680620110,"app":"mmon","p_stats":[56926.7,36965.4,111923],"e":{158.1
4/4/2023, 4:55:01 PM	d	{ "ts":1680620100,"app":"mmon","p_stats":[38402.9,30393.7,59966],"e":{106.67

1-10

```

{
  "ts": 1680620190
  "app": "mmon"
  "p_stats": [
    0 : 51669.4
    1 : 31625.9
    2 : 84404.3
  ]
  "e": [
    0 : 143.526
  ]
  "S": [
    0 : 1
  ]
  "T": [
    0 : 0
    1 : 10
  ]
  "Ph": [
    0 : 0
    1 : 0
  ]
  "TPh": [
    0 : 0
    1 : 0
  ]
  "Sx": [
    0 : 0
    1 : 0
  ]
  "Tx": [
    0 : 0
    1 : 0
  ]
  "A": [
    0 : 0
  ]
}

```

Zerynth Platform – SAP CPI Configuration



Cloud Integration



Design / Design

Packages (1)

Name	Mode	Version	Created Date	Description
 Zerynth - IoT Integration	Editable	1.0	Thu, 16 Feb 2023 11:16:32 GMT	Integrate Zerynth IoT data and S/4HANA


Cloud Integration


Design / Zerynth - IoT Integration / Zerynth - IoT Integration

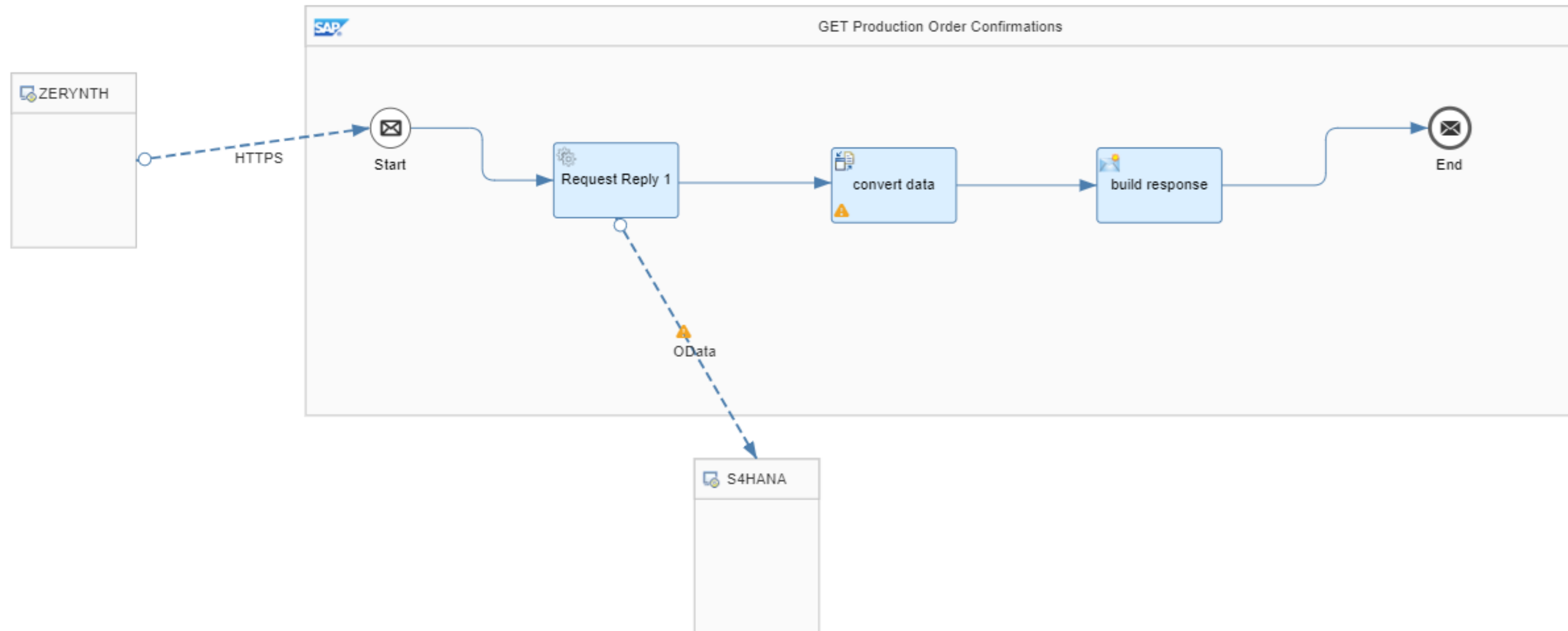
Integrate Zerynth IoT data and S/4HANA

Version: 1.0
Mode: Editable

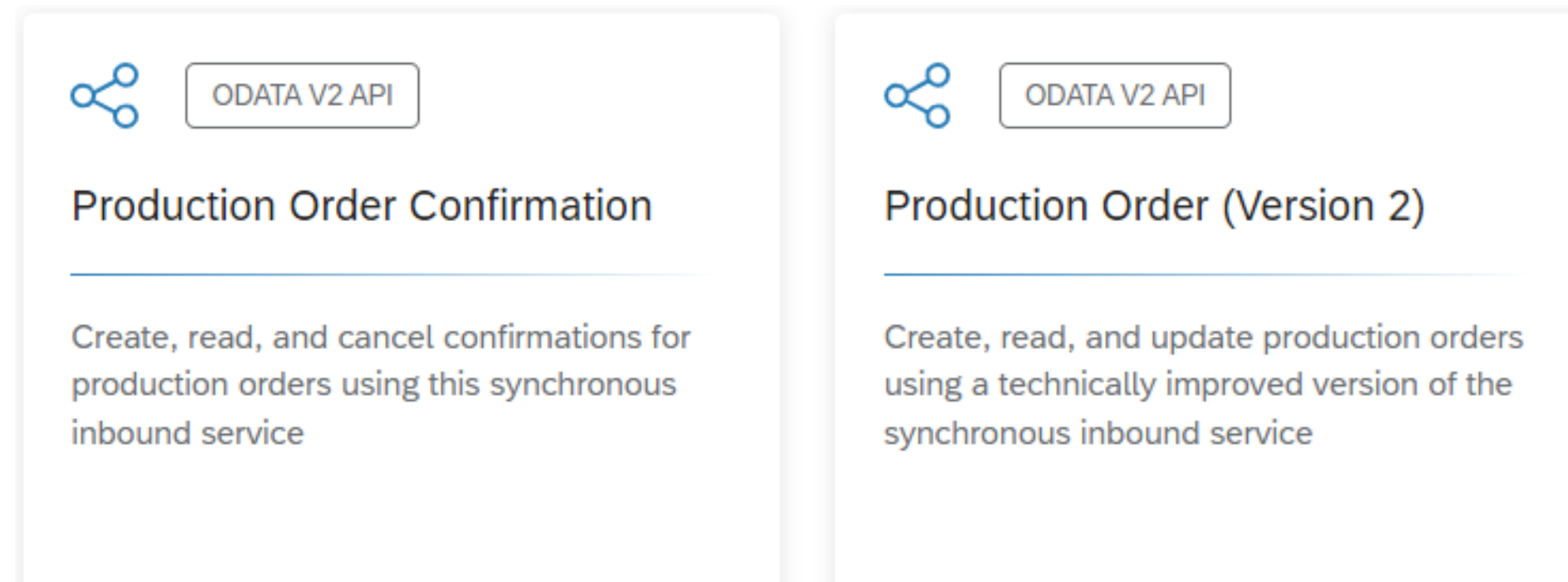
Overview
Artifacts (2)
Documents
Tags

☐	Name	Type
☐	S4HANA Production Orders API Created	Integration Flow
☐	Zerynth Data Ingestion Created	Integration Flow

Zerynth Platform – SAP API Configuration



Zerynth Platform – SAP Connector Configuration



URL: `https://1500350-iflmap.hcisbp.eu3.hana.ondemand.com`

PATH: `/http/s4hana/API_PROD_ORDER_CONFIRMATION`

QUERY: `?$filter=WorkCenter eq '%s' and MfgOrderConfirmationEntryDate eq datetime'%s' and MfgOrderConfirmationEntryTime ge time'%s' and MfgOrderConfirmationEntryTime le time'%s'`

CREDENTIALS: `basic auth or API KEY or client certificate`

Zerynth Platform – SAP Connector Launch

```

zagent-zagent-1 | 2023-04-04 14:52:46,158 :: INFO      :: BOOT      ::
zagent-zagent-1 | 2023-04-04 14:52:46,158 :: INFO      :: BOOT      :: zAgent booting at /z
zagent-zagent-1 | 2023-04-04 14:52:46,158 :: INFO      :: BOOT      ::
zagent-zagent-1 | 2023-04-04 14:52:46,158 :: INFO      :: BOOT      ::
zagent-zagent-1 | 2023-04-04 14:52:46,158 :: INFO      :: BOOT      ::
zagent-zagent-1 | 2023-04-04 14:52:46,158 :: INFO      :: BOOT      ::
zagent-zagent-1 | 2023-04-04 14:52:46,158 :: INFO      :: BOOT      ::
zagent-zagent-1 | 2023-04-04 14:52:46,158 :: INFO      :: BOOT      ::
zagent-zagent-1 | 2023-04-04 14:52:46,158 :: INFO      :: BOOT      ::
zagent-zagent-1 | 2023-04-04 14:52:46,159 :: INFO      :: BOOT      ::
zagent-zagent-1 | 2023-04-04 14:52:46,159 :: INFO      :: BOOT      ::
zagent-zagent-1 | 2023-04-04 14:52:46,284 :: INFO      :: BOOT      :: ##### ROUND 0 with hash afa87f6b6555d37d17bcffc553b571d6 dockerhash e4d54913d3933da06ffdeac7c87b0da6
zagent-zagent-1 | 2023-04-04 14:52:46,638 :: INFO      :: ConfigManager :: Reset reason 98
zagent-zagent-1 | 2023-04-04 14:52:46,638 :: INFO      :: ConfigManager :: Version fmw-7h2mtvsobasl:v1
zagent-zagent-1 | 2023-04-04 14:52:46,638 :: INFO      :: ConfigManager :: Agent v3.0.8
zagent-zagent-1 | 2023-04-04 14:52:46,838 :: INFO      :: persistqueue.common :: Selected pickle protocol: '4'
zagent-zagent-1 | 2023-04-04 14:52:47,471 :: WARNING   :: opcua.client.client :: cryptography is not installed, use of crypto disabled
zagent-zagent-1 | 2023-04-04 14:52:48,718 :: WARNING   :: opcua.server.server :: cryptography is not installed, use of crypto disabled
zagent-zagent-1 | 2023-04-04 14:52:48,728 :: INFO      :: JobManager    :: Loading Jobs from settings/jobs.yml
zagent-zagent-1 | 2023-04-04 14:52:48,729 :: INFO      :: JobManager    :: Loading Job test
zagent-zagent-1 | 2023-04-04 14:52:48,730 :: INFO      :: JobManager    :: Loading Job core.loglevel
zagent-zagent-1 | 2023-04-04 14:52:48,730 :: INFO      :: TaskManager   :: Loading Tasks from settings/tasks.yml
zagent-zagent-1 | 2023-04-04 14:52:48,731 :: INFO      :: TaskManager   :: Loading Task Modbus
zagent-zagent-1 | 2023-04-04 14:52:48,731 :: INFO      :: TaskManager   :: Loading Core Tasks
zagent-zagent-1 | 2023-04-04 14:52:48,731 :: INFO      :: FotaManager    :: Fota ongoing False, testing False
zagent-zagent-1 | 2023-04-04 14:52:48,731 :: INFO      :: TaskManager   :: Loading client...
zagent-zagent-1 | 2023-04-04 14:52:48,732 :: INFO      :: ConfigManager :: Retrieving credentials....
zagent-zagent-1 | 2023-04-04 14:52:48,732 :: INFO      :: ConfigManager :: Getting credentials from zdevice.json for dev-6k616kxugugv with mode device_token
zagent-zagent-1 | 2023-04-04 14:52:48,735 :: INFO      :: Modbus        :: Starting TASK Modbus
zagent-zagent-1 | 2023-04-04 14:52:48,735 :: INFO      :: Modbus        :: Started
zagent-zagent-1 | 2023-04-04 14:52:48,736 :: INFO      :: JobManager    :: Starting TASK JobManager
zagent-zagent-1 | 2023-04-04 14:52:48,736 :: INFO      :: Agent         :: Starting TASK Agent
zagent-zagent-1 | 2023-04-04 14:52:48,736 :: INFO      :: Agent         :: Starting Agent...
zagent-zagent-1 | 2023-04-04 14:52:48,736 :: INFO      :: Agent         :: No data or events, sleeping...
zagent-zagent-1 | 2023-04-04 14:52:48,736 :: INFO      :: FotaManager    :: Starting TASK FotaManager
zagent-zagent-1 | 2023-04-04 14:52:48,736 :: INFO      :: ZFSManager     :: Starting TASK ZFSManager
zagent-zagent-1 | 2023-04-04 14:52:48,736 :: INFO      :: Acquisition    :: Starting TASK Acquisition
zagent-zagent-1 | 2023-04-04 14:52:48,737 :: INFO      :: MQTT          :: Starting TASK MQTT
zagent-zagent-1 | 2023-04-04 14:52:48,737 :: ERROR     :: Acquisition    :: Can't load default graph, using empty one
zagent-zagent-1 | 2023-04-04 14:52:48,737 :: INFO      :: TaskManager   :: TaskManager is watching...
zagent-zagent-1 | 2023-04-04 14:52:48,737 :: ERROR     :: MQTT          :: MQTT connection error: Failed connection loop with 7
zagent-zagent-1 | 2023-04-04 14:52:48,771 :: INFO      :: Modbus        :: Connected to modbus server
zagent-zagent-1 | 2023-04-04 14:52:49,742 :: ERROR     :: Agent         :: Publish data failed with Message publish failed: The client is not currently connected.
zagent-zagent-1 | 2023-04-04 14:52:50,739 :: INFO      :: MQTT          :: Connecting to zmqtt.zdm.zerynth.com:8883 with heartbeat 10
zagent-zagent-1 | 2023-04-04 14:52:50,746 :: ERROR     :: Agent         :: Publish data failed with Message publish failed: The client is not currently connected.
zagent-zagent-1 | 2023-04-04 14:52:50,938 :: INFO      :: MQTT          :: Connected! Subscribing to topics...
zagent-zagent-1 | 2023-04-04 14:52:50,939 :: INFO      :: MQTT          :: Subscribing to j/dn/dev-6k616kxugugv
zagent-zagent-1 | 2023-04-04 14:52:52,942 :: INFO      :: MQTT          :: Subscribed!
zagent-zagent-1 | 2023-04-04 14:52:54,945 :: INFO      :: MQTT          :: Sending handshake to ZDM
zagent-zagent-1 | 2023-04-04 14:52:54,945 :: INFO      :: MQTT          :: requesting status...
zagent-zagent-1 | 2023-04-04 14:52:54,946 :: INFO      :: MQTT          :: sent message up {'key': '#status', 'value': {}}
zagent-zagent-1 | 2023-04-04 14:52:54,947 :: INFO      :: MQTT          :: This presentation is for demonstration purposes only and is not intended for production use.

```

Zerynth Platform – Results

Tabella: ZERYNTH_ORD_CONS

	Mdt	Timestamp	Ordine	C. lav.	CONSUMPTIO	CONSUMPTIO	CONSUMPTIO	TIME_CYCLE	IDLE_TIME	WORKING_TI	ORDER_TIME	QTY
	012	20.230.223.100.028	000009774693	W0PL059	81,60	24,70	56,90	14,50	1.252,00	6.019,00	7.271,00	500,00
	012	20.230.223.100.028	000009774702	W0PL057	46,30	14,80	31,50	9,70	419,00	5.404,00	5.823,00	600,00
	012	20.230.223.100.028	000009774709	W0PL052	1.080,00	89,00	991,00	46,80	1.518,00	31.231,00	32.749,00	700,00
	012	20.230.223.100.028	000009774716	W0PL044	115,00	36,00	79,00	14,80	1.092,00	3.365,00	4.457,00	300,00



Enabling IoT

company website | www.zerynth.com