

/AI @ the Edge Webinar Series

Exploring Edge AI Use Cases leveraging the Infineon PSOC 6 AI Evaluation Kit

April 2025



/ Agenda & Speakers

- **Intro – Keaton Andersen**
- **PSoC6 AI Kit Overview – Keaton Andersen**
- **Utilizing Sensors with /IOTCONNECT – Keaton Andersen**
- **DEEPCRAFT™ Overview – Lukas Wirkestrand**
- **DEEPCRAFT™ Ready Models – Lukas Wirkestrand**
- **DEEPCRAFT™ Ready Models Showcase – Steven Detloff**
 - IMU-Based Models (Fall Detection – Elderly Care)
 - Microphone-Based Models (Smart Manufacturing – Siren & Alarm Detection)
 - Radar-Based Models (Gesture Detection & Retail Scenarios)
- **Q&A + Resources - All**



Keaton Andersen
Sr Manager, Customer Solutions
Avnet



Lukas Wirkestrand
System Applications Engineer
Imagimob



Steven Dettloff
IoT Solutions Manager
Avnet

Product Introduction: PSOC™ 6 AI Kit

Introduction to PSOC™ 6 AI Evaluation Kit and key features.

Sensor overview (IMU, radar, microphones, pressure) & technical specs.

Featured Ready Model Applications

Factory Alarm

Fall Detection

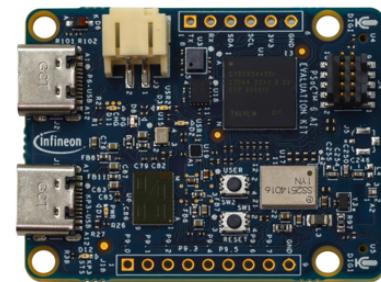
Gesture Recognition



Siren Detection
Ready Model



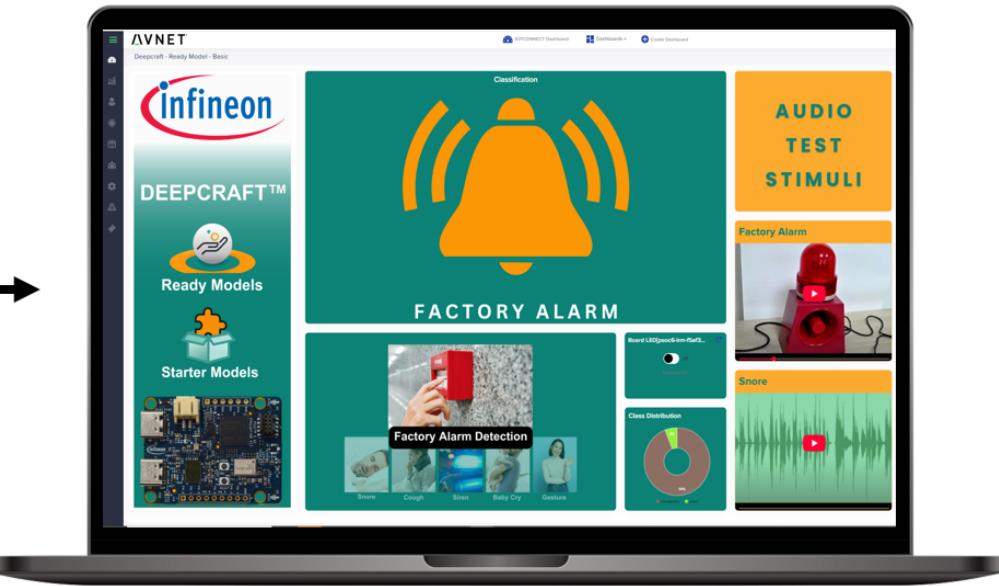
Infineon PSOC™ 6 Artificial Intelligence
Evaluation Kit



Onboard
Microphone



/IOTCONNECT™



Featured Ready Model Applications

Factory Alarm

Fall Detection

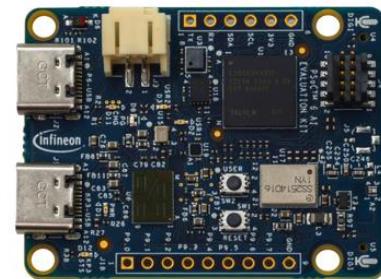
Gesture Recognition



Fall Detection
Ready Model

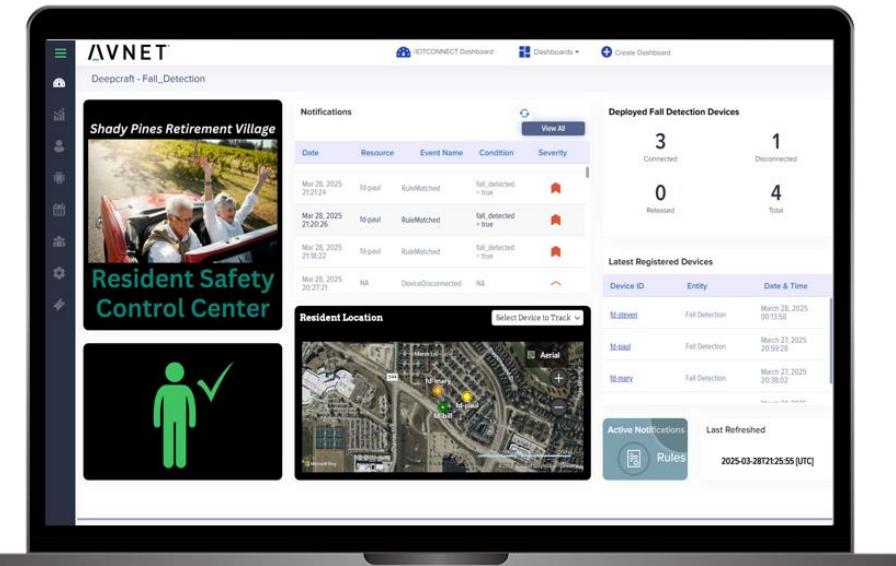


Infineon PSOC™ 6 Artificial Intelligence
Evaluation Kit



Onboard
IMU

/ IOTCONNECT™

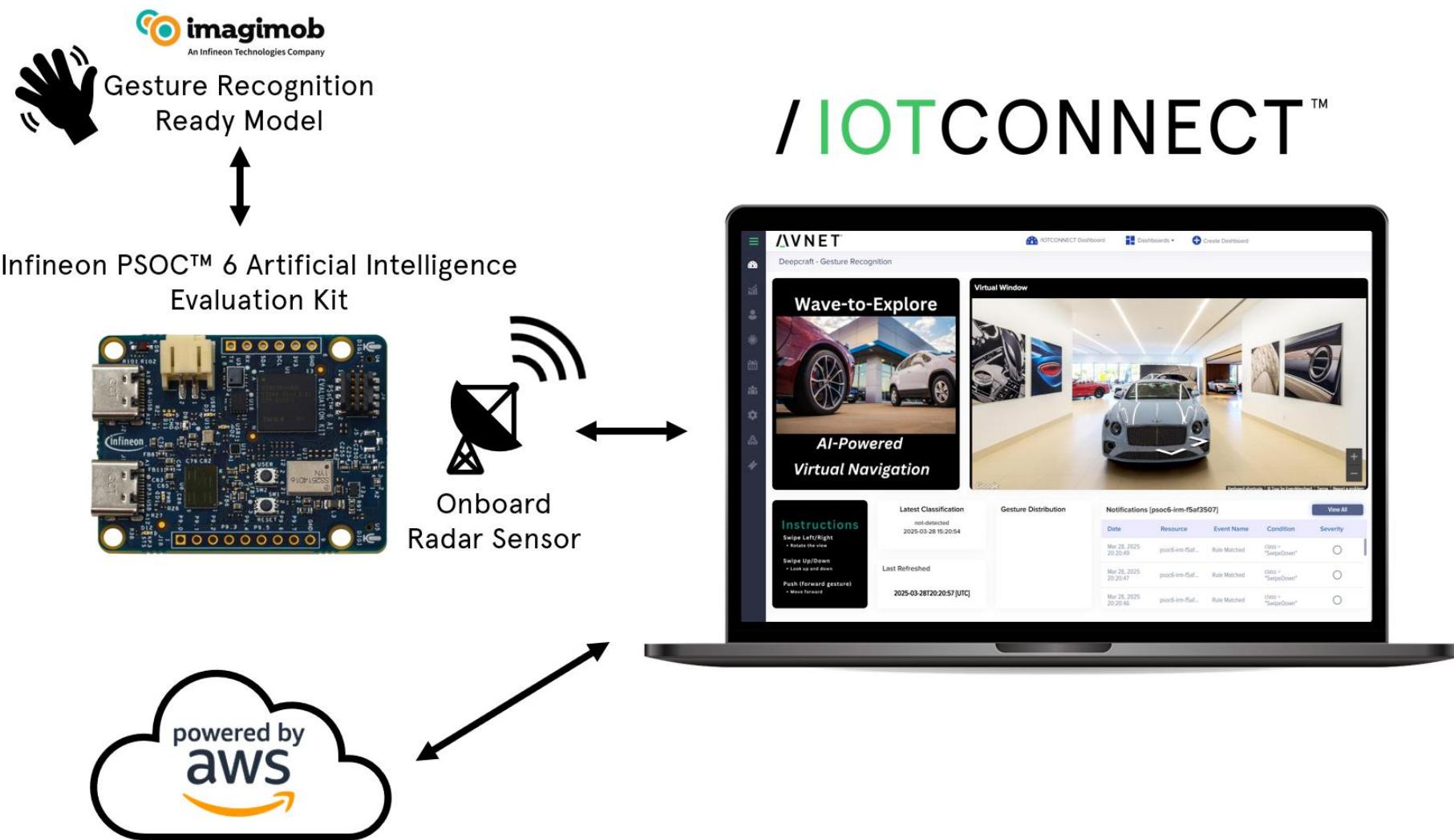


Featured Ready Model Applications

Factory Alarm

Fall Detection

Gesture Recognition



/ PSOC™ 6 AI Evaluation Kit

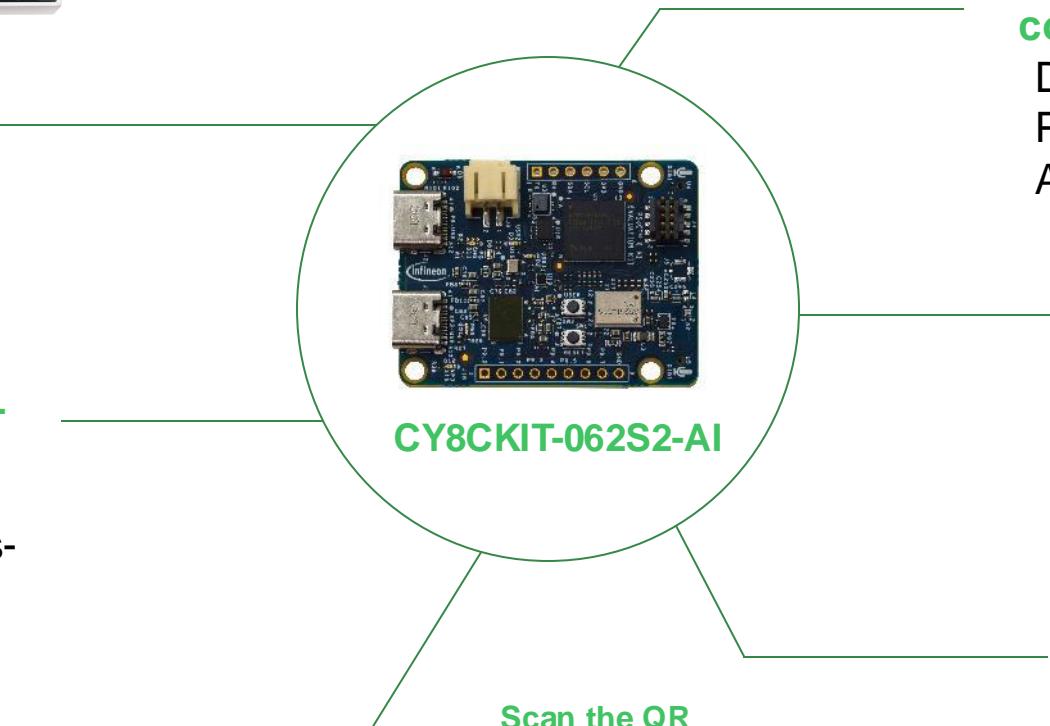
Infineon's HW Platform for Edge AI

www.Infineon.com/aikit



Easy to use & low-cost

Evaluation board with efficient form factor for easy prototyping



CY8CKIT-062S2-AI

Scan the QR code for more



Connect easily & continuously improve models

Wired & wirelessly

Fast time to market at minimal development cost



Direct launch for PSOC™ 6 & AURIX™

End-to-end



Collect data, create, train, evaluate & deploy your ML models fast



The best of Hardware, Software & ML



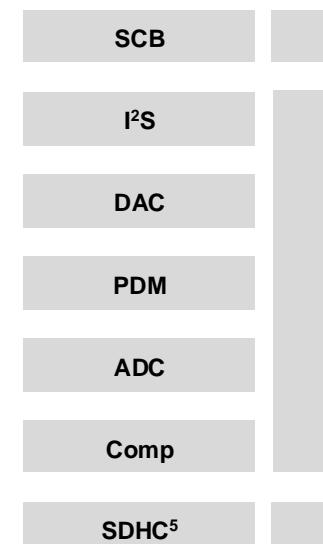
Solution approach with PSOC™ 6, QSPI Flash & multi-sensor input: radar, microphone, pressure & 6-axis motion sensor

Most flexible, high-performance, dual-core architecture designed specifically for the IoT:

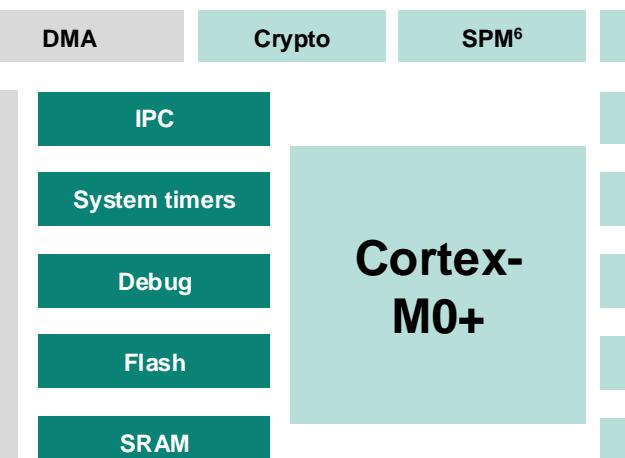
- High performance 150-MHz and 100-MHz dual-core Arm® Cortex®-M4 and Arm® Cortex®-M0+ architecture
- Ultra-low-power 40-nm technology and design that consumes as little as 22- μ A/MHz in active power mode
- High-performance dual-core architecture to optimize system power consumption and performance

PSOC™ 6 high-performance, dual-core MCU architecture

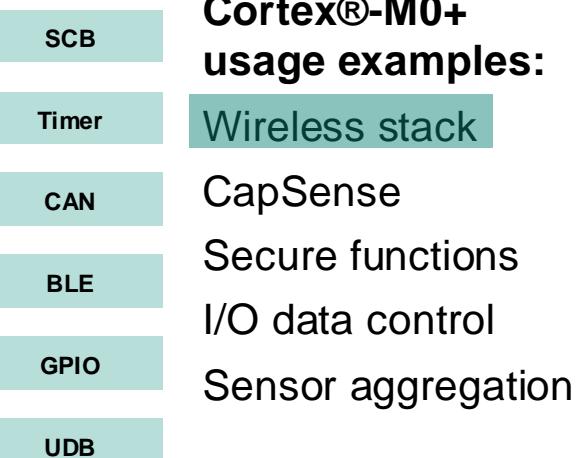
**Cortex®-M4
usage examples:**



Cortex-M4



**Cortex-
M0+**



**Cortex®-M0+
usage examples:**

Wireless stack
CapSense
Secure functions
I/O data control
Sensor aggregation

Main Core Resources

System Resources

Auxiliary Core Resources

/AI evaluation kit software architecture

Application examples

Imagimob data collection
and deployment

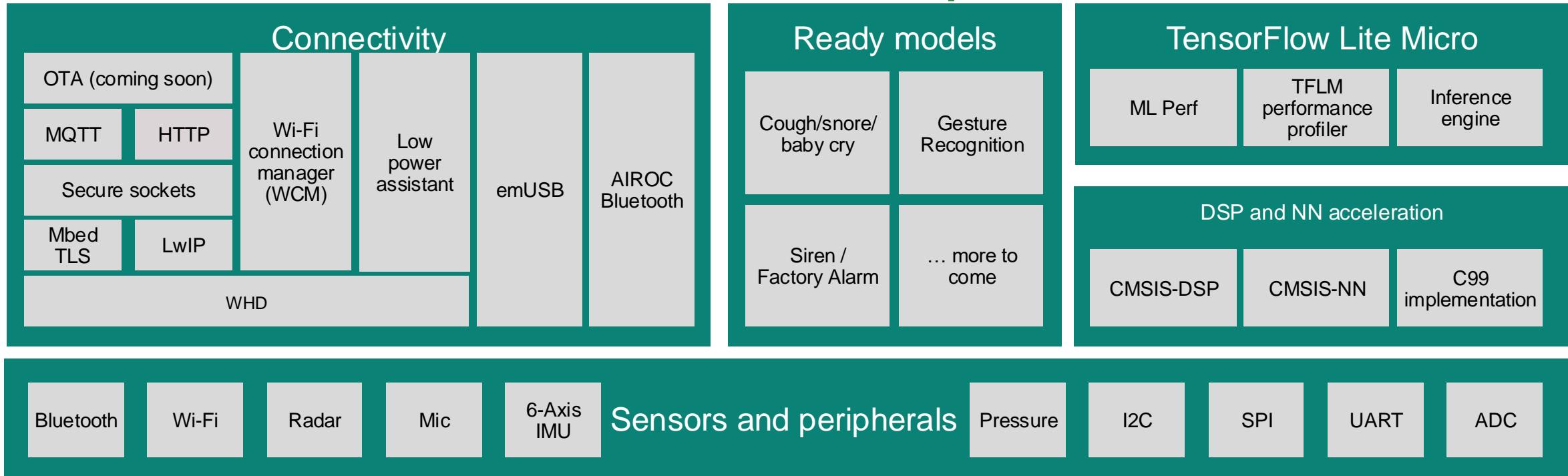
Wi-Fi, HTTP client/server

Radar presence detection

Radar gestures

Audio event detection

PSOC™ 6 software components



DEEPCRAFT™ by Imagimob Overview

/ Imagimob, An Infineon Technologies Company

Our mission is to be the best, fastest way for our customers to take their Edge AI models into production.

Imagimob in a nutshell

- **AI Expertise:** Extensive AI/ML engineering experience from 50+ customer projects.
- **An Infineon Company:** Extended support for Infineon microcontrollers and sensors. Customers can leverage Infineon's expertise for manifold applications.
- **DEEPCRAFT™ Studio:** Our state-of-the-art Edge AI/ML development platform is fully embedded into Infineon's solution ecosystem, making model development, training and optimization on target hardware easy and fast.
- **DEEPCRAFT™ Ready Models:** Production ready, off-the-shelf Edge AI models.



Lukas Wirkestrand

System Application Engineer at Imagimob
Wirkestrand.external@infineon.com

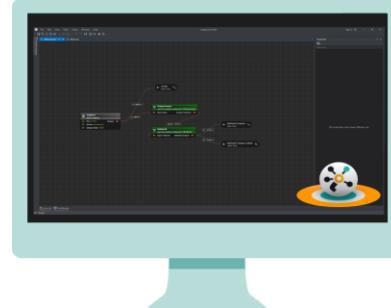
/DEEPCRAFT™ Edge AI/ML Software enables easy integration into all designs and fast go-to-market

DEEPCRAFT™ products provide innovative, trustworthy, convenient and green AI software solutions for customer Our portfolio offers end-to-end Edge AI and best-in-class system performance in combination with Infineon Hardware

Edge AI Development Platform

For data collection, pre-processing, model training, model conversion & deployment

DEEPCRAFT™ Studio



Edge AI Models

Ranging all the way from fully trained and ready to deploy to getting you started easily with model development. All customizable through DEEPCRAFT™ Studio

DEEPCRAFT™ Ready Models 5+ DEEPCRAFT™ Starter Models 10+



Edge AI Solutions

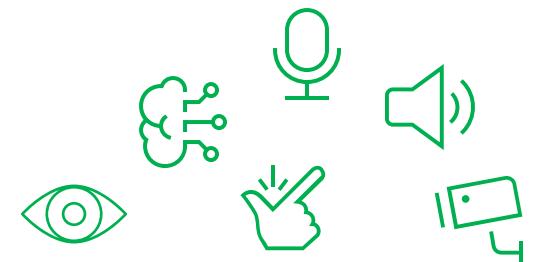
Collection of high value tools, models and configurators to add AI based capabilities in voice, audio, vision and sensing

DEEPCRAFT™ Voice Enhancement*

DEEPCRAFT™ Voice Assistant*

DEEPCRAFT™ Face ID*

Liquid Level Sensing



* in development

/DEEPCRAFT™ Ready Models

Our offering of production quality, ready to deploy Edge AI models

Available now

Baby Cry Detection 

Factory Alarm Detection 

Cough Detection 

Siren Detection 

Direction of Arrival 

Snore Detection 

Fall Detection 

Gesture Detection 

In development

Surface Detection 

Presence Detection 

Object Detection 



Audio



Radar



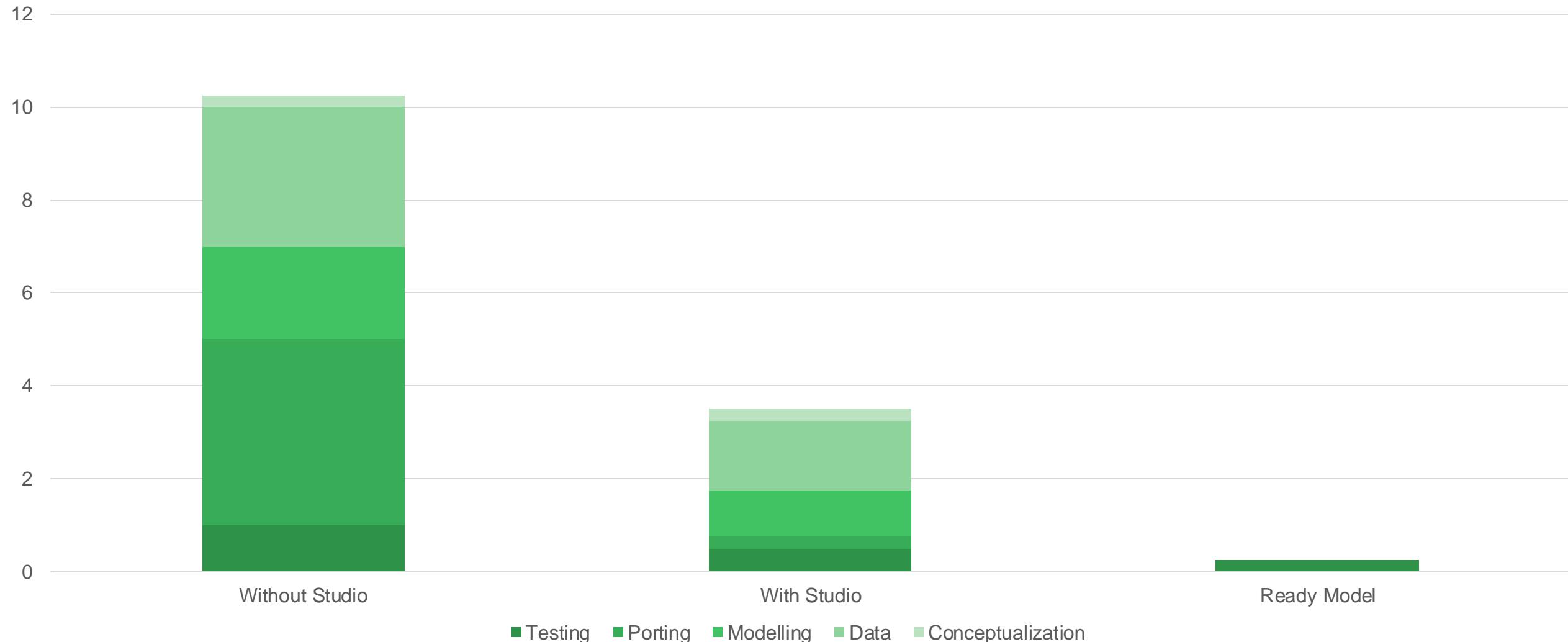
Accelerometer



Vision

/ Benefits of DEEPCRAFT™ Studio and Ready Models

Save months of developer time using optimized AI models



/DEEPCRAFT™ Ready Model for Gesture Detection

The DEEPCRAFT™ Ready Model for Gesture Detection is a radar-based system specifically designed to detect different gestures a person performs in close proximity to a radar sensor. These include 5 different gestures; 4 swipe gestures and 1 push gesture. This model can be used in different appliances, monitor screens, laptops or other such applications where doing gestures in short range is required.



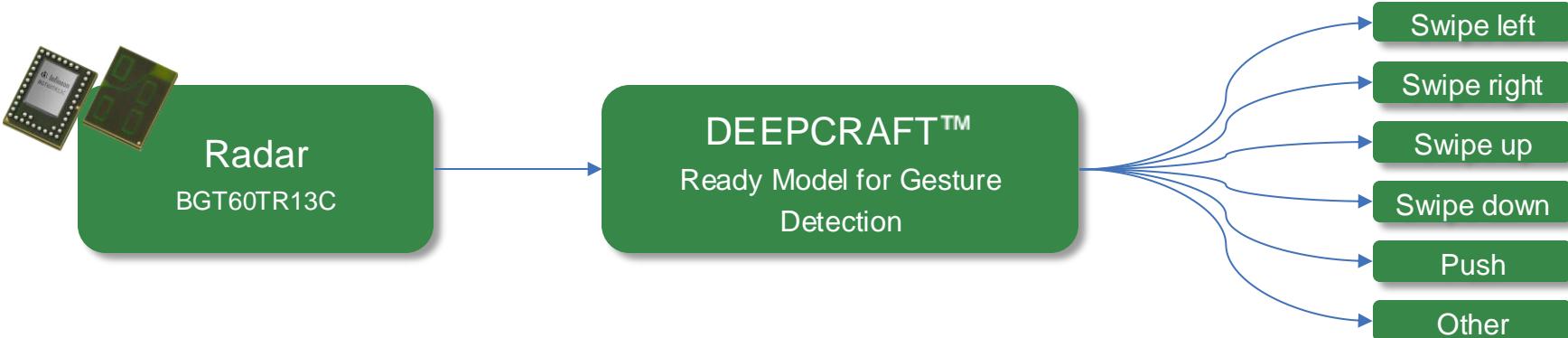
Technical specs

- Detects 5 different kinds of gestures – gestures should last 1-2 seconds
- Detects ~92% of gestures at distance of 10 cm – 70 cm from radar
- Designed to work with different heights, speeds, distances and angles
- Robust against different hand movements that are not the 5 gestures
- Can be further developed to recognize more gestures

Model specs

- Optimized to run in real-time on an Infineon PSOC™ 6 with XENSIV™ BGT60TR13C radar sensor
- Memory footprint: RAM: 3 kB, Flash: 45 kB
- Inference time: 8 ms, every 91 ms
- The model expects: range, velocity, azimuth, elevation, magnitude at 33 Hz from the radar

Possible use cases:
Contactless control of computer monitor, household appliances, etc.
Sleek, no button product design.



/DEEPCRAFT™ Ready Model for Fall Detection

The DEEPCRAFT™ Ready Model for Fall Detection is an accelerometer-base Edge AI model designed to detecting a person falling, more specifically designed for the elderly. The model is intended for a wrist-worn device.



Technical specs

- Detects falls, with sensitivity tailored especially for the elderly.
- Detects ~93% of falls.
- Designed be very robust against False Positives (FP): 1.8 - 2.25 FP/week for more active users
- Ready to be tested on Infineon PSOC™ 6 AI Evaluation Kit

Model specs

- Optimized for running in real-time on Infineon PSOC™ 6 MCUs
- Memory footprint: RAM: 6 kB, Flash: 15 kB.
- Inference time: 1 ms, every 20 ms.
- Able to detect a fall using an accelerometer with the following sensor settings:
 - Scale = +/- 8g
 - Resolution = 12 or 16 bit
 - Sampling Frequency = 50 Hz

Possible use case:

The model could be added to a watch or smart bracelet to detect when the wearer falls and alert care takers or emergency services.



/DEEPCRAFT™ Ready Model for Factory Alarm Detection

AVNET

The DEEPCRAFT™ Ready Model for Factory Alarm Detection is an audio event detection system specifically designed for detecting alarms and sirens in a factory setting. The purpose of the model is to increase safety in factories.



Technical specs

- Measures alarm and siren sounds longer than 1.2 seconds
- Detects ~90% of alarm and siren sounds in a factory setting.
- Signal To Noise Ratio must be at least 10 dB to be detected.
- Designed to be robust against different distances and angles from the sound source.
- Designed to be robust against diverse factory background sounds.

Possible use case:

This model can be used to alert workers wearing headphones or protective gear over their ears when an alarm goes off.

Model specs

- Optimized to run in real-time on an Infineon PSOC™ 6, and runs well within the hardware limitations.
- Memory footprint: RAM: 27 kB, Flash: 32 kB.
- Inference time: 144 ms, every 800 ms.
- Able to detect a cough from sound data with: 16000 Hz Sample Rate, 1 (Mono) Channel, 16 bit Bit Depth.



/Which MCU you need for each DEEPCRAFT™ Ready Model

Ready Model	Recommended MCU*	RAM (kB)	Flash (kB)	Inference (ms) on PSOC™ 6	Sensitivity (%)
Gesture detection	PSOC 6 (CM4)	3	45	8	92
Fall detection	PSOC 4 (CM0)	6	15	1	93
Snore detection	PSOC 6 (CM4)	24	53	23	92
Baby Cry detection	PSOC 6 (CM4)	27	27	127	95
Cough detection	PSOC 6 (CM4)	27	82	150	95
Factory Alarm detection	PSOC 6 (CM4)	27	32	144	90
Siren detection	PSOC 6 (CM4)	60	51	20	92
Direction of Arrival (Audio)	PSOC Edge (U55)	826	186	82**	97

* Minimum requirement for running the model, higher processors offer better performance and scalability

** This model cannot run on PSOC™ 6, inference is instead calculated on an Arm Cortex® -A72 processor

CM4 => Arm® Cortex® -M4

CM0 => Arm® Cortex® -M0

U55 => Arm® Ethos™ -U55

/DEEPCRAFT™ Ready Models

- Production-ready Edge AI models
- Created by experts
- Trained, tested and optimized for Infineon hardware
- No additional ML development required

Test the Ready Model for Free

/IOTCONNECT™



Free /IOTCONNECT Quick Start projects available on GitHub & ModusToolbox™

Test and build a PoC on an Infineon evaluation kit

Add the Ready model to your product



Sign the license agreement

Get the full library

[Contact Imagimob to Request Ready Models](#)

Distribute your product



Pay a royalty per device

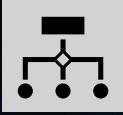
Deploy the model in your product

IOTCONNECT

Overview

/IOTCONNECT: Overview

/ IOTCONNECT™
Infineon Solutions



User, Entity, and Device provisioning, management, and monitoring



Data ingestion, processing, and visualization in near real time



Supports both AWS IoT Core and Azure IoT Hub with common APIs

DESIGNED FOR . . .

Device Builders & Deployment Managers



- Device & User Mgmt
- F/W & Security Mgmt
- Dashboarding
- Internal Ops

Cloud Developers & Data Scientists



- DynamoDB / S3
- Cosmos DB / Blob
- SignalR / AWS SNS
- Event Hub / Service Bus

UX Designers & Application Developers

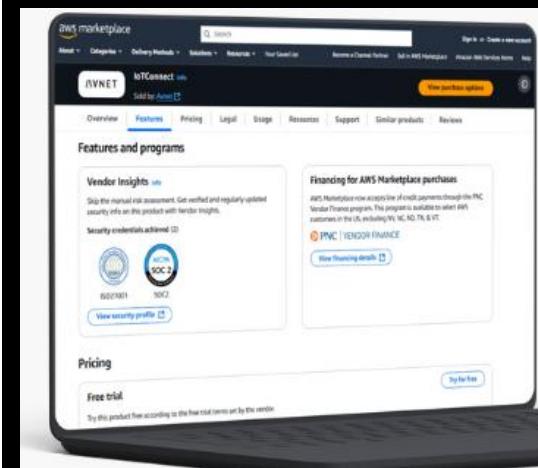


- RESTful API
- Predictable URLs
- Intelligent error handling
- OAuth 2.0 authentication

/IOTCONNECT: How to Get It

AWS Marketplace

SaaS Free Trial: 60-days / 500K Msgs / 10 Devices / 10 Users



Devices

IoT Core, Greengrass, LoRaWAN, Sidewalk

Connectors

Signal-R, Dynamo DB, S3, SNS, Grafana

IOTCONNECT Personal Plans

SaaS Free Trial: 30-days / 30K Msgs / 5 Devices / 5 Users

Personal SaaS Plans

AWS or Azure
Messages: 30K – 5M
Devices: 5 – 100
Users: 5 - 100



Azure Marketplace



Smart Asset Monitoring

By Avnet Inc.
Monitor & track your assets remotely to gain rich insights into machine health and utilization

Smart Connected Worker

By Avnet Inc.
Harness the power of IoTConnect to gain real-time visibility into worker health and safety

SmartFactory

By Avnet Inc.
Production Line Monitoring Solution for industrial automation and smart manufacturing of the future



Gold
Microsoft
Partner



Contact Us

IoT@Avnet.com

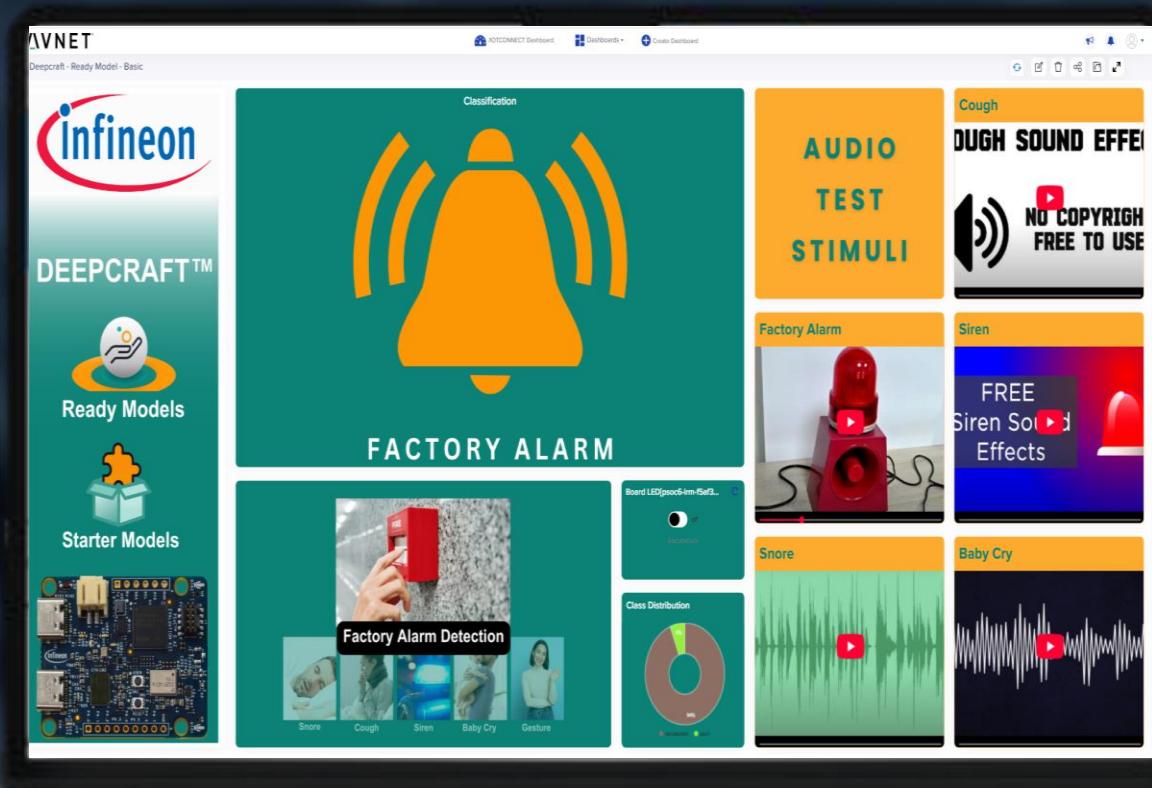


- IOTCONNECT pricing and details
- AI & Data Analytics
- Enterprise Application Development
- Embedded Software & System Integration
- Global Technology Supplier Ecosystem

Devices
IoT Hub

Connectors
Power BI, Azure Notification Hub, Signal-R, Cosmos DB, Blob

/ PSOC™ 6 DEEPCRAFT™ AI Demonstration



Ready Model Example Project
<https://github.com/avnet-iotconnect/avnet-iotc-mtb-ai-imu-example>

Deploy AI devices within an enterprise AWS and Azure infrastructure

DEEPCRAFT™ AI Model Showcase

- **IMU-Based Models (Fall Detection - Elderly Care)**
 - Scenario introduction, personas involved (administrator, Emergency Response).
 - Dashboard examples with analytics (historical data, alerts).
- **Microphone-Based Models (Smart Manufacturing - Siren & Alarm Detection)**
 - Siren detection overview and technical capabilities.
 - Factory alarm detection and practical safety use cases.
- **Radar-Based Models (Gesture Detection & Retail Scenarios)**
 - Gesture detection Ready Model and practical retail use cases.
 - Radar technical specifications and transformation widgets.

Fall Detection (IMU)

AVNET®

Deepcraft - Fall_Detection

Notifications

Date	Resource	Event Name	Condition	Severity
Mar 28, 2025 21:21:24	fd-paul	RuleMatched	fall_detected = true	!
Mar 28, 2025 21:20:26	fd-paul	RuleMatched	fall_detected = true	!
Mar 28, 2025 21:18:22	fd-paul	RuleMatched	fall_detected = true	!
Mar 28, 2025 20:27:21	NA	DeviceDisconnected	NA	~

Deployed Fall Detection Devices

3	Connected
1	Disconnected
0	Released
4	Total

Latest Registered Devices

Device ID	Entity	Date & Time
fd-steven	Fall Detection	March 28, 2025 00:13:58
fd-paul	Fall Detection	March 27, 2025 20:59:28
fd-mary	Fall Detection	March 27, 2025 20:38:02

Active Notifications

Last Refreshed: 2025-03-28T21:25:55 [UTC]

Resident Safety Control Center

Shady Pines Retirement Village

Resident Location

Select Device to Track

Aerial

fd-mary

fd-paul

fd-bill

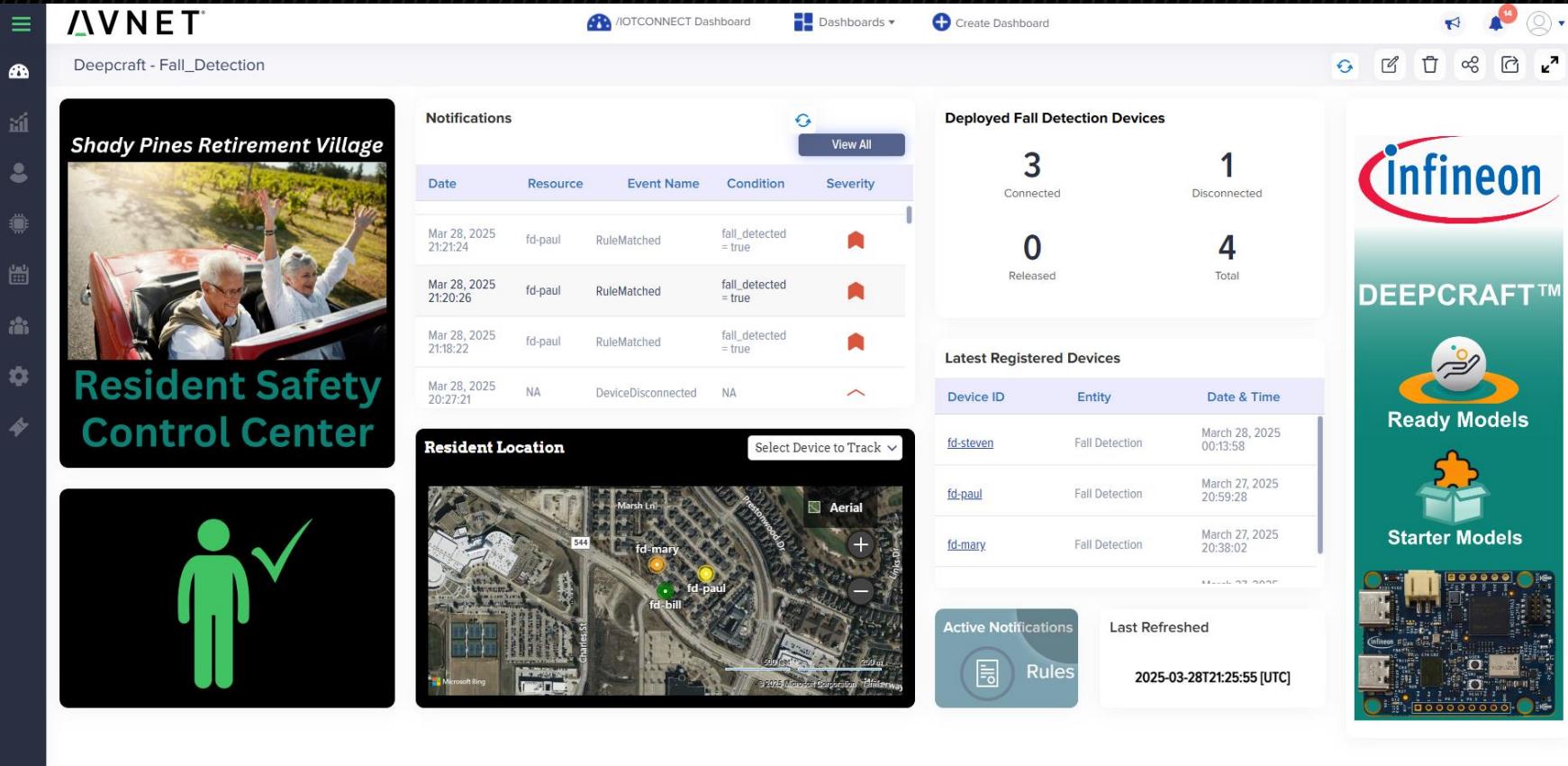
Microsoft Bing

infineon

DEEPCRAFT™

Ready Models

Starter Models



Fall Detection with DEEPCRAFT™ and /IOTCONNECT (IMU)

Scenario:

An assisted living facility operates a centralized control center equipped with /IOTCONNECT, monitoring multiple fall detection devices worn by residents. Each device uses Imagimob's DEEPCRAFT™ Edge AI model to accurately detect falls in real time. When a fall is detected, the device immediately transmits the incident to the /IOTCONNECT platform. The centralized dashboard then triggers alerts and notifications to caregivers instantly, allowing prompt response and assistance. The facility management team can oversee all incidents, manage devices remotely, and continuously optimize fall detection performance through easy retraining and rule adjustments, ensuring maximum safety for residents.

The screenshot shows the /IOTCONNECT Dashboard interface. On the left, there's a sidebar with various icons and a main panel titled "Resident Safety Control Center" featuring a photo of two seniors in a car and a green checkmark icon. The main dashboard has several sections: "Notifications" listing four recent events (all "RuleMatched" with "fall_detected = true"), "Deployed Fall Detection Devices" showing 3 Connected, 1 Disconnected, 0 Released, and 4 Total, with an Infineon DEEPCRAFT™ logo; "Latest Registered Devices" listing three devices (fd-steven, fd-paul, fd-mary) under "Fall Detection"; and "Resident Location" showing a map of a residential area with markers for fd-mary, fd-paul, fd-bill, and fd-paul again. A "Rules" section at the bottom right indicates "Last Refreshed: 2025-03-28T21:25:55 [UTC]".

/IOTCONNECT Features:

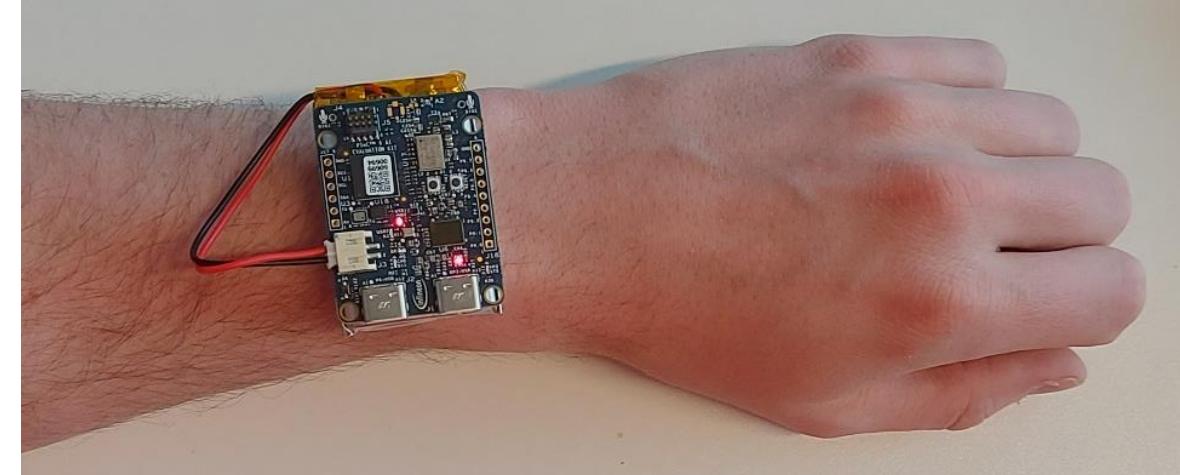
- Real-time Alerting:** Instant notifications to caregivers when a fall is detected.
- Centralized Device Monitoring:** Unified dashboard for tracking the status of all deployed devices.
- Event Logging and Analysis:** Comprehensive logging of fall incidents, device activities, and triggered responses.
- Cloud-Based Rules and Automation:** Automated triggering of alerts, responses, and escalations based on configured rules.

Fall Detection

AI Evaluation Kit Testing Instructions



The model is tailored to detect dangerous falls of elderly people, and it performs best on unpadded falls. However, we recommend testing with a healthy adult and placing pillows to avoid injury - the model works well in these instances too. The model is designed to have a very low False Positive (FP) per user per week; for that reason, it requires the person to lay still for 7-10 seconds after the fall.



To correctly set up the IMU orientation, make sure that the accelerometer X, Y, Z axis and values are as shown in the figures below:

Figure 1 : Bird's eye view of arm flat on table

Figure 2 : Y = 1, X, Z = 0 --- hand held up

Figure 3 : X = -1, Y, Z = 0 --- hand outstretched, palm facing front

Figure 4 : Z = 1, X, Y = 0 --- hand outstretched, palm up

Model version	Sensitivity	False positives per user per week
1.9 (current)	93.3% (28/30)	1.8-2.25
1.8	93.3% (28/30)	1.8-2.25
1.7	90% (27/30)	2.275-2.8
1.6 (baseline)	90% (54/60)	N/A

IOTCONNECT Device Rules

AVNET® /IOTCONNECT Dashboard Dashboards Create Dashboard

Home / Overview / Device / Rules Enter Name

Rules List Create Rule

Filter: None

Rule Name	Template	Entity	Rule Type	Audience Count		Status	Actions
				User	Role		
Device Disconnected	psoc6airm		Device Discon...	1	0	Inactive	
Fall Detected - Shady Pines	psoc6airm	Fall Det...	Standard	1	0	Active	

Notification Type

DeviceCommand Email Push WebHook UI Alert UI Notification

Enable :

Subject:*

Rule Matched

Body:*

Hi ##FirstName## ##LastName##,
Rule ##RuleName## has been matched for Device ##DeviceUniqueId## successfully.

Factory Siren & Alarm Detection (mic)

The collage consists of four screenshots:

- AVNET IOTCONNECT Dashboard:** Shows a "Factory Alert" card with an aerial view of a factory and the text "AI-Based Siren & Alarm Detection". Below it is a table of notifications and an "Override[EW25prog]" button.
- Classification:** A teal card featuring a large yellow bell icon with sound waves, labeled "Classification" at the top and "FACTORY ALARM" at the bottom.
- Stimulus 1:** A video player showing a red emergency siren connected to a power outlet on a wooden desk.
- Stimulus 2:** A video player showing a red siren with a megaphone base, with a YouTube progress bar indicating 0:37 / 0:51.
- infineon DEEPCRAFT™:** A promotional card for DEEPCRAFT™ featuring the infineon logo, "DEEPCRAFT™", "Ready Models", "Starter Models", and an image of a Dev Board.

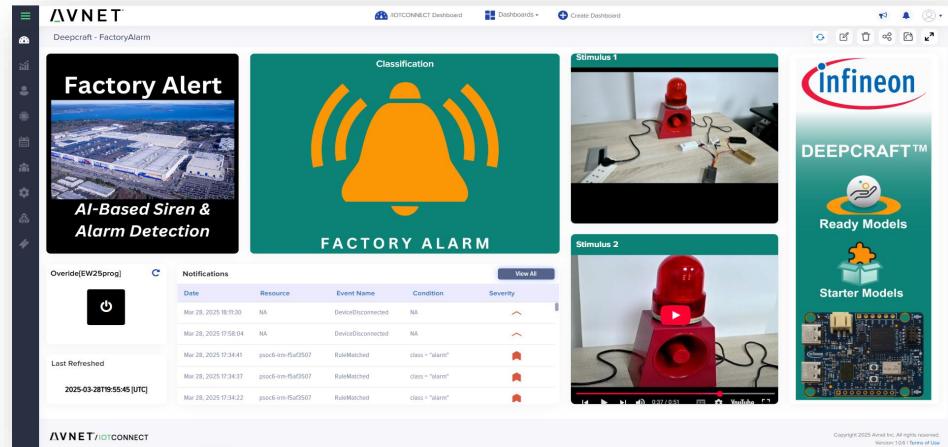
Smart Manufacturing: Siren Detection (Acoustic)

Real-time detection and notification of factory alarms and sirens using advanced audio-based AI Scenario:

In a large factory, various sources could trigger an alarm, such as machinery malfunctions or manually activated emergency alarms. The DEEPCRAFT™ Ready Model actively listens and accurately identifies these alarms, triggering an automated response via /IOTCONNECT cloud-based rules. When an alarm is detected, the system immediately activates a visual alert (red LED) across the facility and notifies the central control center through real-time dashboard updates.

The control center sees an immediate update via transformation widgets, indicating an active alarm. Simultaneously, /IOTCONNECT logs the event, triggers UI alerts, and can notify designated personnel through email, SMS, or other push mechanisms.

Once the situation is resolved, the control center can easily deactivate the alarm centrally using the dashboard's control interface (on/off button), disabling the alarm system and turning off the visual indicators.

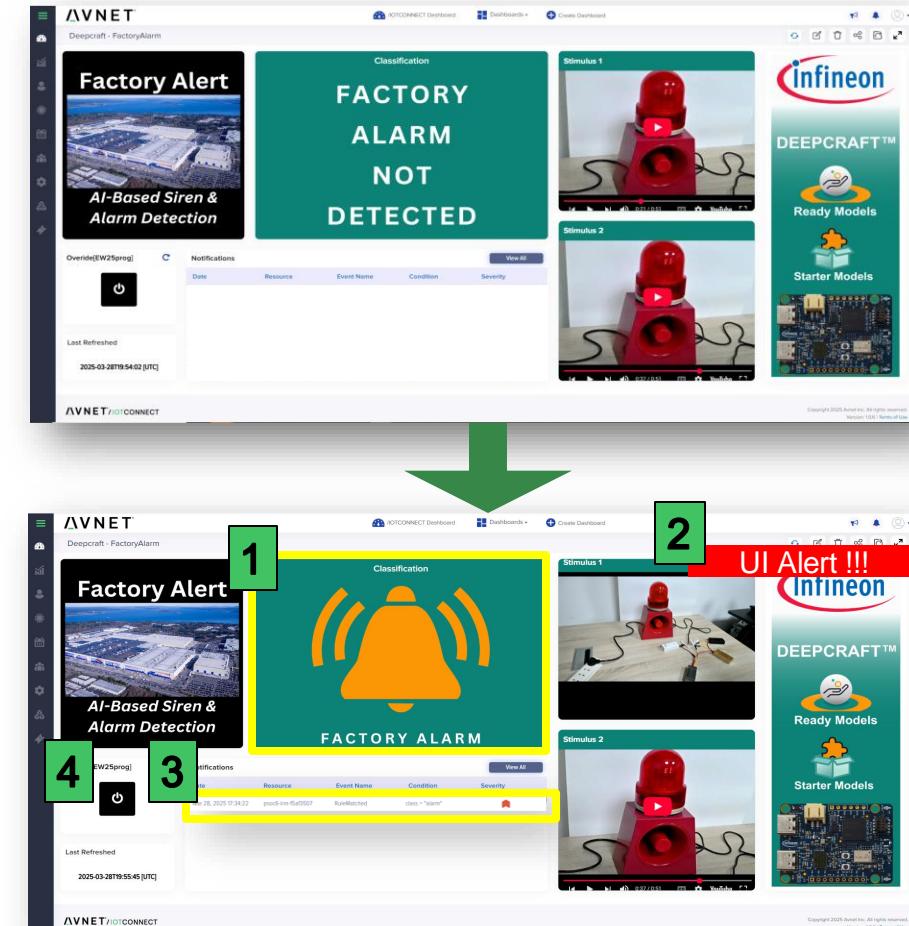


/IOTCONNECT Features:

- Real-time Notifications:** Immediate alerts when an alarm is detected
- Centralized Device Management:** Remotely activate or deactivate alarms
- Event Logging:** Comprehensive tracking of device statuses, events, and alarms
- Cloud-Based Rules:** Automated response triggers upon alarm detection

AI-based sound recognition provides enhanced operational safety, response capabilities, and streamlined management in industrial environments.

From Sound to Action: Built on Infineon's MEMS Microphone



- Transformation Widget visual alert
- UI Alert across the /IOTCONNECT Portal
- Activated Rules are categorized and logged in the platform
- Device Command can override device alerts

IOTCONNECT Device Rules: C2D Commands

AVNET /IOTCONNECT Dashboard Dashboards Create Dashboard

Home / Overview / Device / Rules

Edit Rule

Rule name*: Factory Alarm Template*: psoc6airm Severity levels*: Critical

Attribute*: class Condition*: Is equal to Value*: alarm

Rule Applies On

All Device of Selected Entity

Selected Devices (Maximum 10 devices are allowed)

Device Group

psoc6-irm-f...

Templates Devices Commands Notifications

Trigger C2D Command

Notification Type

DeviceCommand Email Push WebHook UI Alert UI Notification

Enable :

Device Command Details

Select Command*: board-user-led Parameter Value*: on

Ignore Preference: ?

Audience

Roles: Select Roles Users: Select Users Michael La...

Templates Devices Commands Rules Firmware Batch Import Data Export

Triggers user LED



Gesture Detection (radar)

AVNET

Deepcraft - Gesture Recognition

Virtual Window

Google

Wave-to-Explore

AI-Powered Virtual Navigation

Instructions

- Swipe Left/Right
 - Rotate the view
- Swipe Up/Down
 - Look up and down
- Push (forward gesture)
 - Move forward

Latest Classification

not-detected

2025-03-28 15:20:54

Last Refreshed

2025-03-28T20:20:57 [UTC]

Gesture Distribution

Notifications [psoc6-irm-f5af3507]

Date	Resource	Event Name	Condition	Severity
Mar 28, 2025 20:20:49	psoc6-irm-f5af...	Rule Matched	class = "SwipeDown"	Info
Mar 28, 2025 20:20:47	psoc6-irm-f5af...	Rule Matched	class = "SwipeDown"	Info
Mar 28, 2025 20:20:46	psoc6-irm-f5af...	Rule Matched	class = "SwipeDown"	Info

View All

infineon

DEEPCRAFT™

Ready Models

Starter Models



Smart Retail: Gesture-Controlled Virtual Showroom (radar)

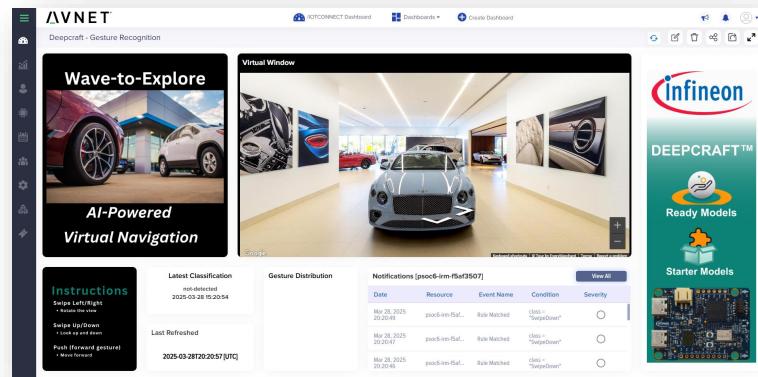
Gesture-based navigation of retail spaces using advanced AI and IoT integration

Scenario:

Today's retail customers seek engaging, interactive ways to explore products remotely or at in-store kiosks. The Imagimob DEEPCRAFT™ Gesture Recognition Model detects user gestures—swiping left/right, up/down, and pushing forward—and converts them into intuitive virtual navigation commands. Integrated with /IOTCONNECT, these gestures dynamically control a Google Street View-based virtual showroom, allowing remote exploration of products or vehicle displays.

The gesture technology functions as a standalone IoT device, placed flexibly throughout stores without requiring an attached screen. Sales personnel receive instant notifications, enabling immediate insights into customer interactions and proactive engagement with personalized recommendations.

The dashboard updates via transformation widgets, displaying recognized gestures and triggered webhooks. The platform logs interactions, remotely updates navigation start points, and delivers analytics to optimize showroom layouts and enhance customer experiences.

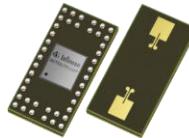
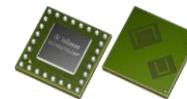
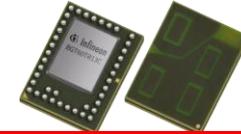


/IOTCONNECT Features:

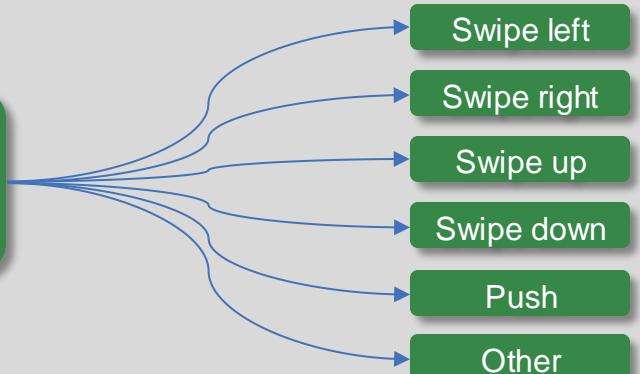
- Remote Interaction Control:** Update views through IoT-based gestures.
- Event Tracking and Logging:** Logging of user gestures, events, and triggered actions.
- Sales Personnel Notifications:** Real-time alerts enabling customer engagement.
- Cloud-Based Webhooks:** Automated cloud responses adjust showroom navigation

AI-based gesture recognition with /IOTCONNECT provides retailers with immersive customer experiences, enhanced remote selling capabilities, proactive sales interactions, and valuable insights for optimizing store environments.

From Gesture to Action: Built on Infineon's mmW Radar Technology

6.7 x 3.3 mm²4.05 x 4.05 mm²6.5 x 5.0 mm²

	BGT60LTR11AIP	BGT60UTR11AIP	BGT60TR13C
Positioning	Smart & cost-effective PIR replacement	Compact and cost-efficient radar chip for FMCW operations	Enable advanced radar sensing including presence, tracking and gesture control
Operating Mode	Doppler Radar with integrated detectors	FMCW (5.6 GHz BW)	FMCW (5.5 GHz BW)
Motion and Direction	Yes	Yes	Yes
Presence Detection	Only short range (~1m)	Yes	Yes
Range information	No	Yes	Yes
Angular information	No	No	Yes
Main value proposition	Completely autonomous mode	Smallest 60 GHz chip with integrated antennas	Maximum functionality and flexibility
Target use cases	Motion detection, Presence detection (short range)	Presence detection, gesture control, vital sensing, 1D ranging, material classification	Presence detection, gesture control, vital sensing, segmentation, tracking, distance



/IOTCONNECT Device Rules: Webhook Notifications

AVNET

AVNET /IOTCONNECT Dashboard Dashboards + Create Dashboard

Rules List

Home / Overview / Device / Rules Enter Name Filter: Name: swipe

Rule Name	Template	Entity	Rule Type	Audience Count		Status	Actions		
				User	Role				
swipe down	psoc6alarm	Infineon	Standard	1	0	Active			
swipe left	psoc6alarm	Infineon	Standard	1	0				
swipe push	psoc6alarm	Infineon	Standard	1	0				
swipe right	psoc6alarm	Infineon	Standard	1	0				
swipe up	psoc6alarm	Infineon	Standard	1	0				

Create Rule

Notification Type: DeviceCommand, Email, Push, **WebHook**, UI Alert, UI Notification

Enable:

Webhook Details:

Url:

Message Format: Default Mini

Headers:

Templates Devices Commands Rules Firmware Batch Import Data Export

AWS Cloud Diagram:

- IOTCONNECT (Webpage) connects to Amazon API Gateway (Webhook).
- Amazon API Gateway connects to AWS Lambda.
- AWS Lambda connects to Amazon DynamoDB.
- Amazon DynamoDB connects back to AWS Lambda.
- AWS Lambda also connects to IOTCONNECT (Webpage) via "Polling DynamoDB via API Gateway".
- Amazon Simple Storage Service (Amazon S3) is shown at the bottom.

Webhook Settings

Notification Type: DeviceCommand, Email, Push, **WebHook**, UI Alert, UI Notification

Enable:

Webhook Details:

Url:

Message Format: Default Mini

Headers:

Templates Devices Commands **Rules** Firmware Batch Import Data Export

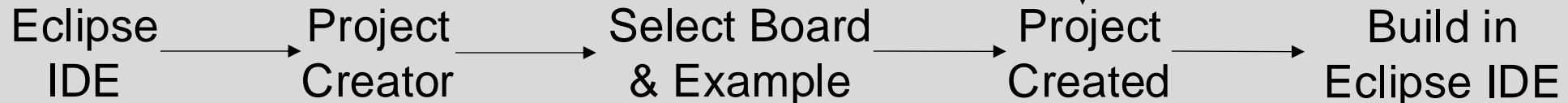
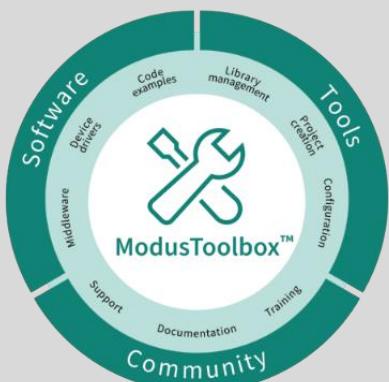
ModusToolbox™ Projects with IOTCONNECT

Available in Project Creator

- [IOTCONNECT Deepcraft Ready Model](#)
- [IOTCONNECT Basic with OTA](#)
- [IOTCONNECT Optiga Trust M](#)
- [IOTCONNECT AI IMU](#)
- [IOTCONNECT AI Baby Monitor](#)

**DEEPCRAFT READY MODELS
on /IOTCONNECT.**

Available in ModusToolbox!



IOTCONNECT Enabled Device Kits & AWS Qualification

AWS-Qualified Devices

Why Choose AWS-Qualified Devices for IoT Core?

- Qualified hardware is robust, secure, and fully compatible with AWS IoT Core.
- Devices will perform consistently in production, minimizing operational risks.
- Development and deployment timelines can be accelerated due to reduced integration complexities.
- IoT solutions will meet high reliability, security, and scalability standards required by enterprise-grade applications.



Technical Validation with AWS IoT Core Device Advisor

- **MQTT protocol compliance**
- **Connection stability and reconnection**
- **Security validation (TLS, authentication)**
- **Message reliability and QoS**
- **Device Shadow functionality**
- **Retained message and Last Will and Testament (LWT) features**
- **Stress and scalability through reliability testing**