Getting on the Fast Track to IoT

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Business Development Lead, Fusion Connect Product Team @LonaMpls

Panelists:

Pat Hughes, Verizon Vibhu Bhatani, Softweb Solutions





IoT Fundamentals & Examples of Business Transformation

Drawn from the book *Precision* by Dr. Timothy Chou this online course provides:

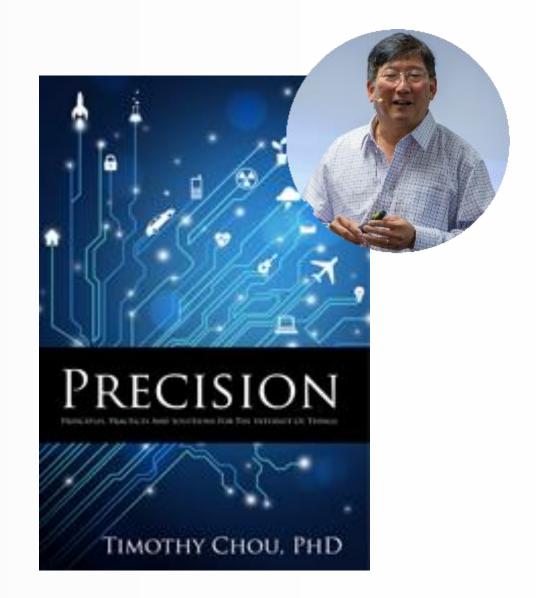
A Five Point Framework

which explains the fundamentals of enterprise loT needed to craft your company's loT strategy.

14 Enterprise IoT Case Studies

demonstrating how companies transformed their businesses.

Dr. Timothy Chou is the former President of Oracle on Demand. He has been a lecturer at Stanford University for 30+ years.



education.ioti.com/courses









Class Summary

This class will provide you with the information you need to build a solution outline for Fusion Connect while avoiding the potential pitfalls and rookie mistakes that can happen when creating connected products



Key Learning Objectives

At the end of this class, you will:

- Understand what components and partners make up a connected product ecosystem
 - protocols
 - devices
 - communications
- Learn the key considerations for selecting the right device(s) and connecting them to your business systems
- Learn how to prepare an outline for your business application



Components and Considerations for a Connected Product Offering



Panelists



verizon

Patrick Hughes
Associate Director, Connected Solutions

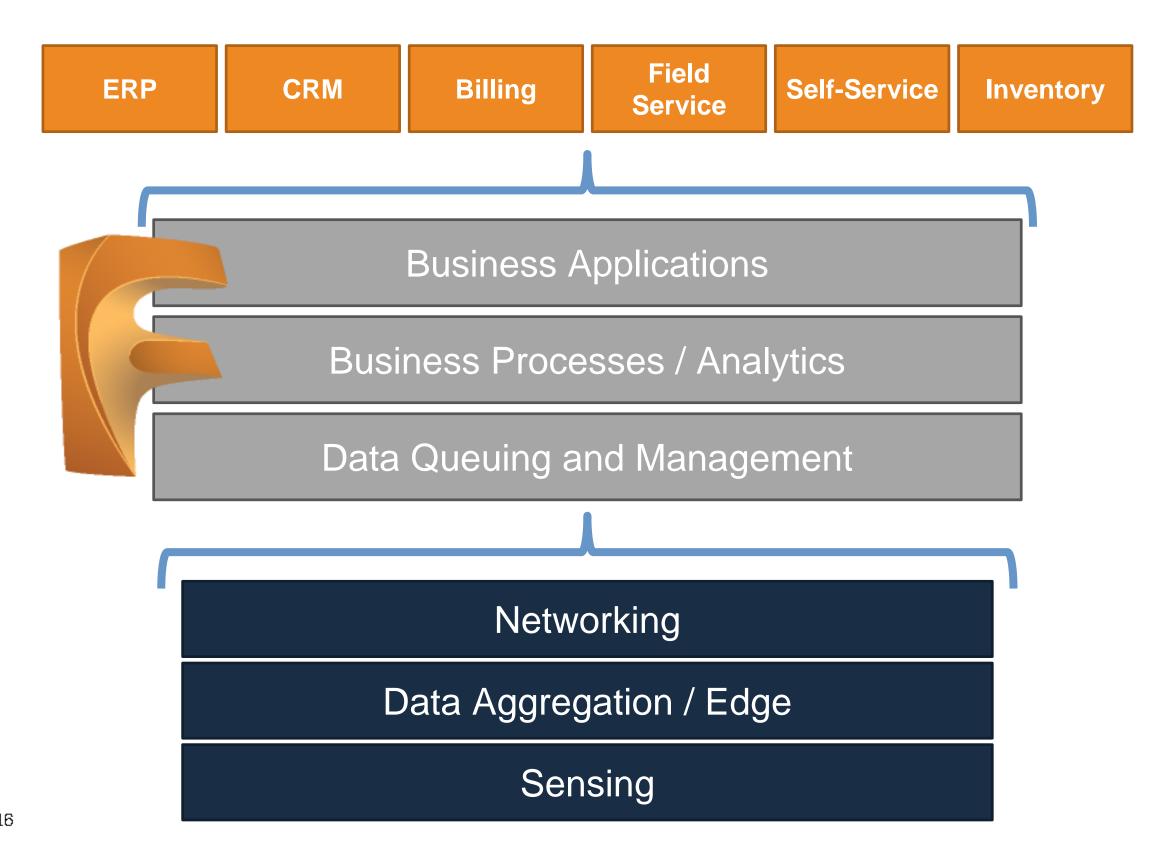




Vibhu Bhutani Chief Strategy Officer



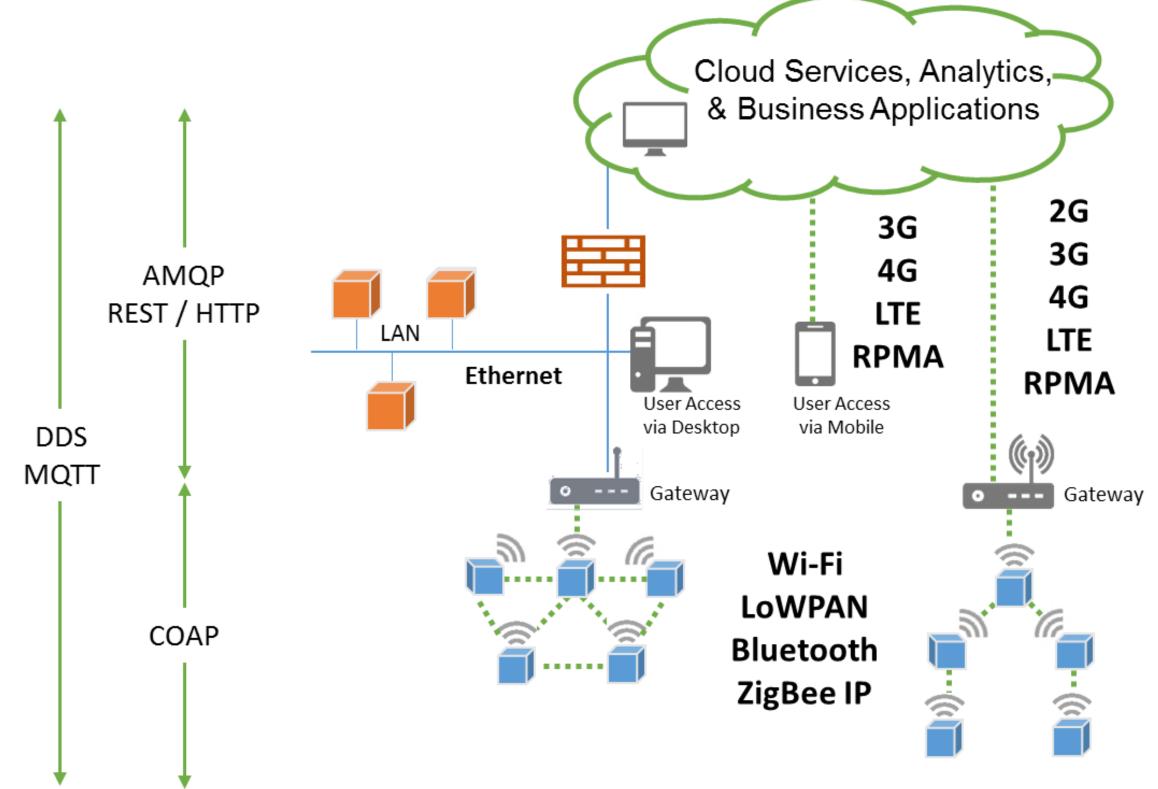
Components of a Connected Product Offering





AUTODESK

Transfer and Communications Protocols

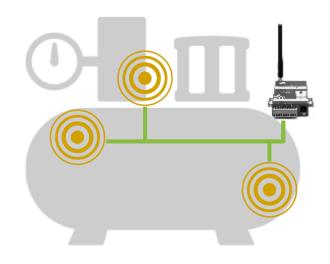


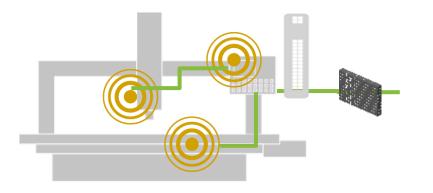
AUTODESK.

Deployment Examples

Industrial Air Compressor Monitoring

- Mounted sensors
- Data gathered by industrial gateway
- CoAP / UDP for minimal data cost
- 3G connection to cloud for monitoring



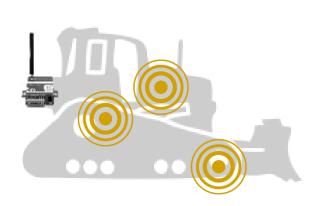


Industrial CNC Machine

- Controller with performance data present
- Router to convert data for remote management
- Ethernet connection to Enterprise LAN
- Secure access remotely through firewall

Specialty Construction Vehicle

- Mounted sensors, including SAE J1939 for engine diagnostics
- Data gathered by industrial gateway, including GPS
- MQTT to enable bi-directional communication
- LTE connection to cloud for monitoring and management





Considerations

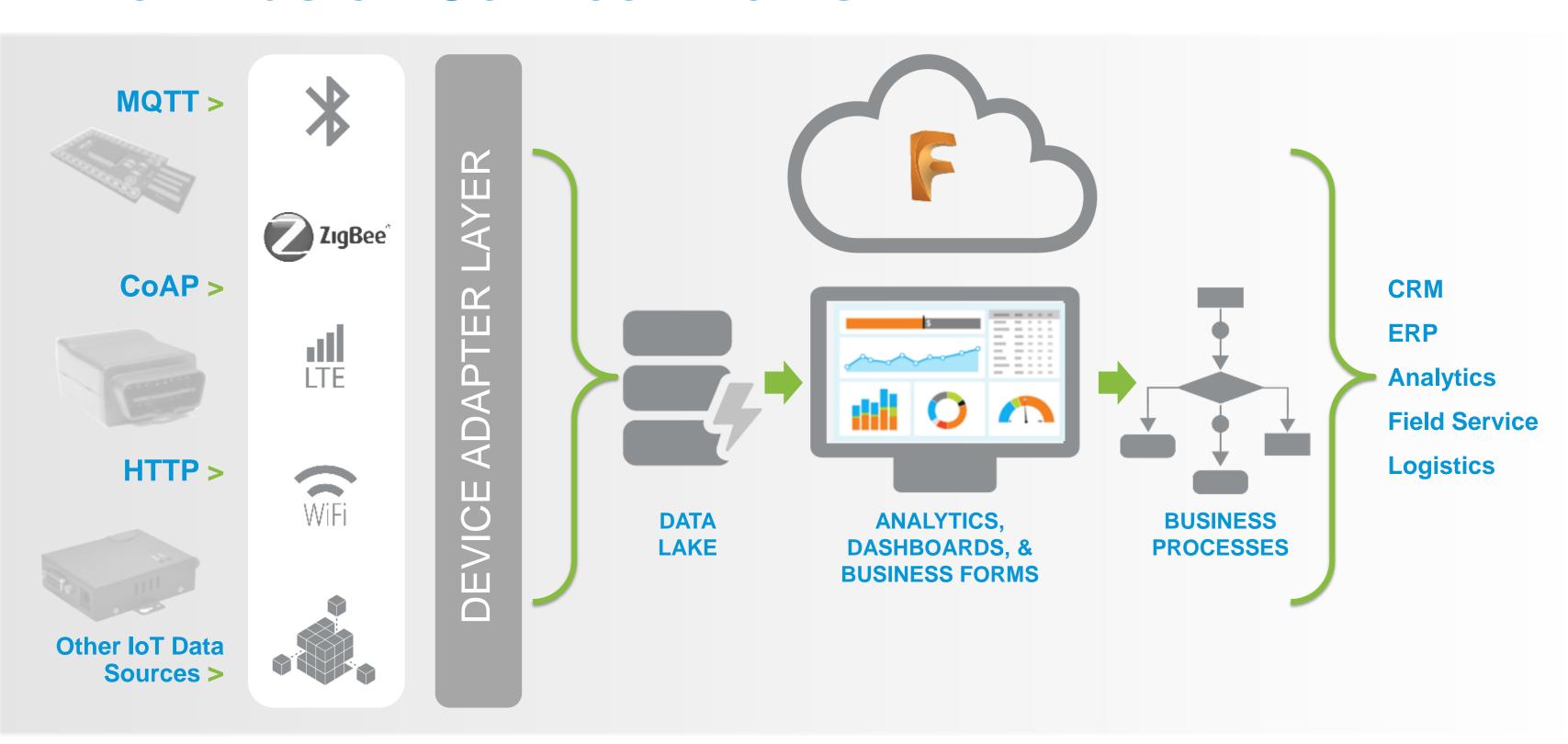
- Mobility will the machine move?
- Power is a battery required?
- Security require certificates and authentication?
- Resources chatty, constant connection?
- Data local storage? Lots of data to process? Bi-directional?



Outlining a Business Application in Fusion Connect



How Fusion Connect Works



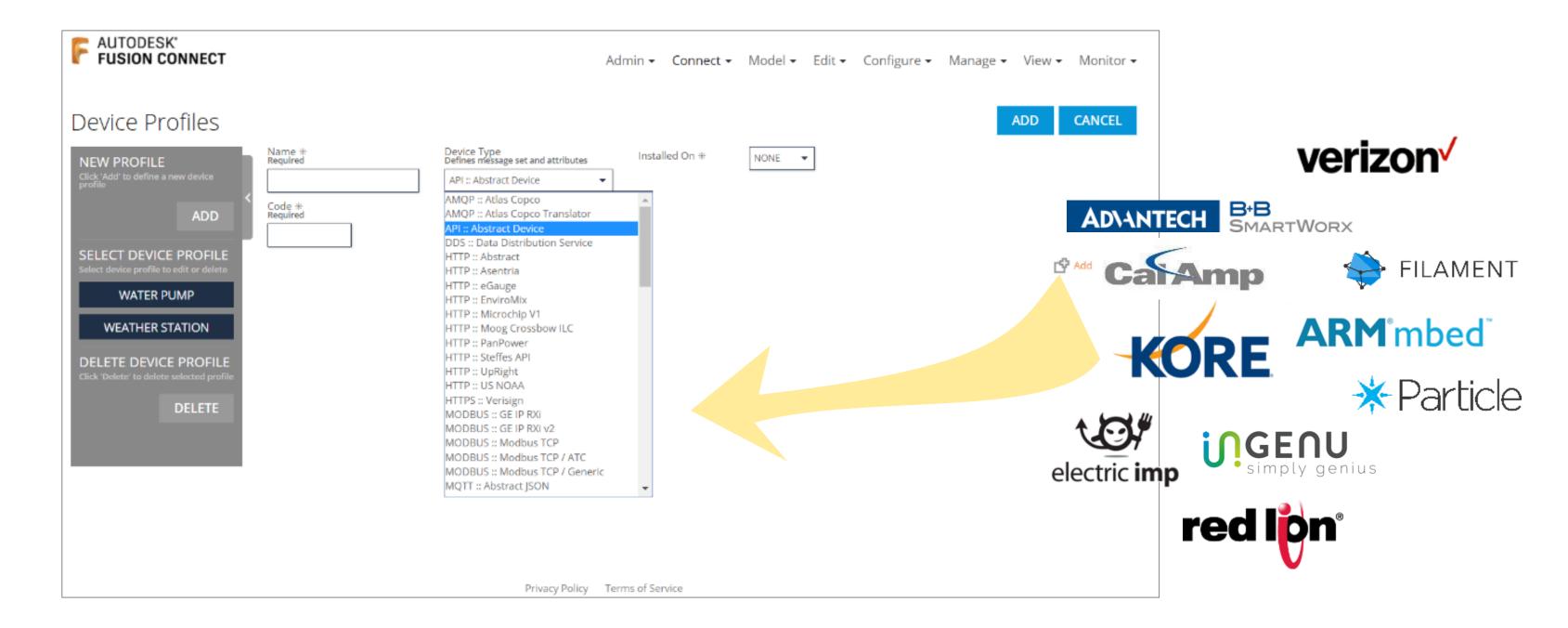


Requirements

- 1. DATA COLLECTION TECHNOLOGY
- 2. CUSTOMER AND DISTRIBUTOR MANAGEMENT
- 3. PRODUCT / ASSET DATA FIELDS COLLECTED
- 4. ANALYTICS & REPORTS
- 5. USER ROLES
- 6. USE CASES



Data Collection Technology





Customer / Distributor Management

Creates proper hierarchy for data management

> AUTODESK* FUSION CONNECT

Group Types

NEW GROUP TYPE

SELECT GROUP TYPE

CUSTOMER

TREATMENT PLANT

DELETE GROUP TYPE

ADD

DELETE

Tustomer

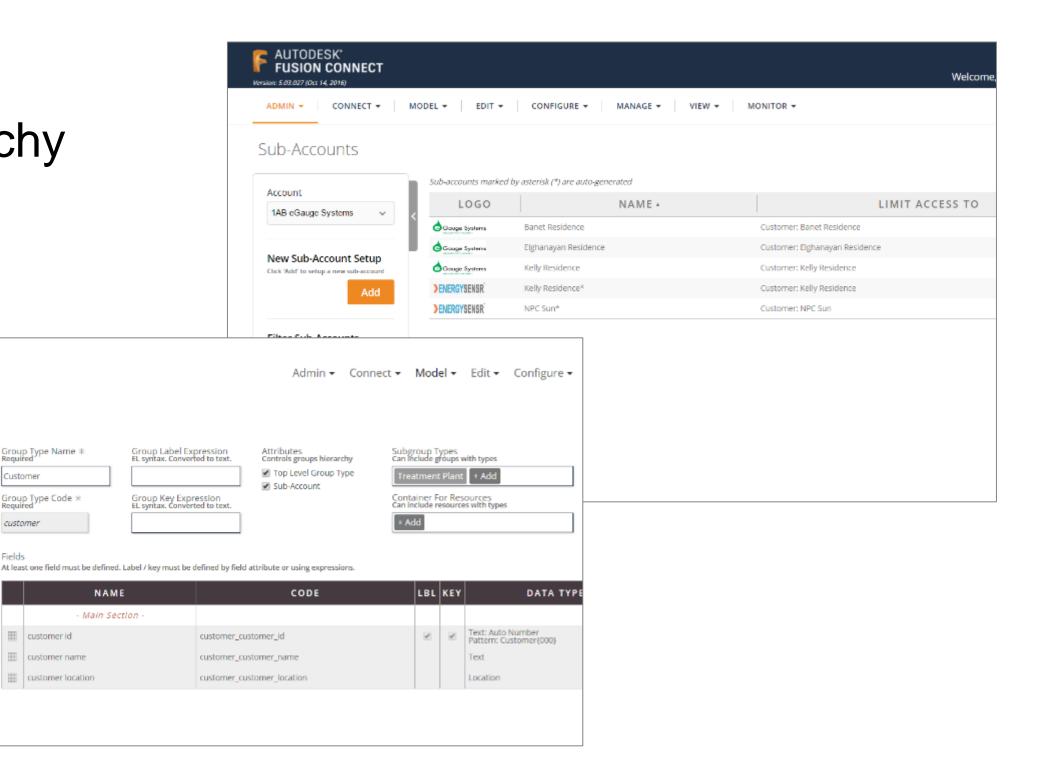
Group Type Code *

iii customer id customer name

customer location

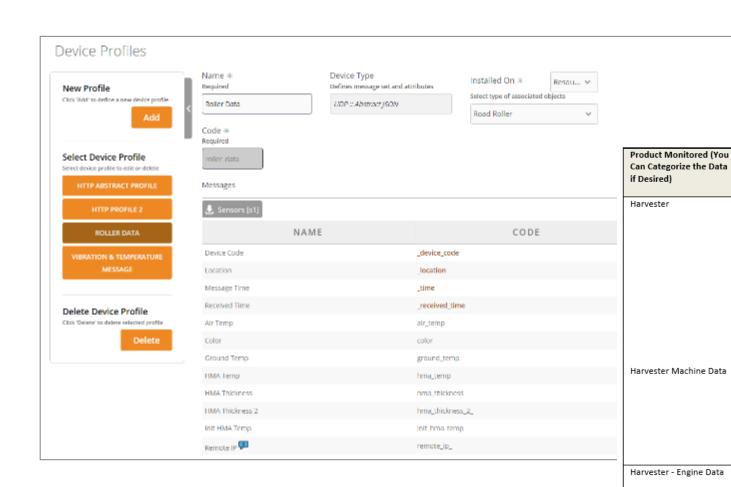
NAME

Main Section





Data Fields Collected



Add Field NAME DATA TYPE REQ Text Device Code _device_code Location location Location Message Time Calendar Received Time received_time Calendar OX Attachment Knob Value VE_FF44_ATTACHMENT_KNOB_VALUE Number OX Attachment Motor RPM VE FF54 ATTACHMENT MOTOR RPM Field Type Alert Level (is there a What is the name of the field 0 X Number threshold that is on the machine or gateway? 0 X interesting to you, Number please provide detail) 0 X Number Text EXAMPLES BELOW FROM A HARVESTING MACHINE OX Text Text 0 X Number Text 0 X Text 0 X URRENT_SP Number Text Date Range 0 X Number Date Range 0 × Number Date Range Date Range CURRENT S 0 X Number Date Range 0 X 3500 or > J1939_CTM_PUMP_1_PRESS Units / PSI 0 - 5000 0 X Numbe J1939_CTM_PUMP_2_PRESS Units / PSI 0 - 5000 3500 or > 0 × Number 0 - 500 400 or > Units / RPM 0 X J1939_CTM_SHAKER_RPM Units / RPM 0 - 2500 1800 or > J1939_CTM_CHOPPER_RPM 0 × Units / Fahrenheit 250 or > J1939_CTM_HYD_OIL_TEMP "On" if Engine Speed >800; Text: On or Off Units / Hours "Off" if < 800 J1939_247_TOTAL_ENGINE_

Defines the structure of the data from the devices

					OURS
	Battery Voltage	Units / Volts	11 - 15	< 11 or > 15	J1939_158_KEYSWTICH_BATT _POTENTIAL
	Engine Speed (1)	Units / RPM	0 - 2500	> 2400	J1939_190_ENGINE_SPEED
	Engine Speed (2)	Units / RPM	0 - 2500	> 2400	J1939_190_ENGINE_SPEED
	Load	Units / Percentage	0 - 100		J1939_92_ENGINE_PERCENT_ LOAD
	Coolant Temp	Units / Fahrenheit	0 - 300	225 or >	J1939_110_ENGINE_COOLAN T_TEMP
	Oil Temp	Units / Fahrenheit	0 - 300	260 or >	J1939_175_ENGINE_OIL_TEM P
	Oil Pressure	Units / PSI	0 - 80	60 or >	J1939_100_ENGINE_OIL_PRE SS
Harvester - Fuel Data	Total Fuel Consumed	Units / Gallons			J1939_250_TOTAL_FUEL_USE D
	Fuel Temp	Units / Fahrenheit	0 - 300	250 or >	J1939_174_ENGINE_FUEL_TE MP
Harvester-Map	Location/Latitude	Latitude			GPS_LATITUDE
	Location/Longitude	Longitude			GPS_LONGITUDE

Data Fields

Device ID

Model#

CTM Serial #

Engine Type

Engine Serial #

Date Purchased

Customer Asset ID/Name

Warranty Start Date-Engine

Warranty End Date-Engine

Warranty Start Date-CTM

Warranty End Date-CTM

Head Conveyor - Pump 2

Suction Fan - Pump 1

Shaker Head Speed

Hydraulic Oil Temp

Chopper Speed

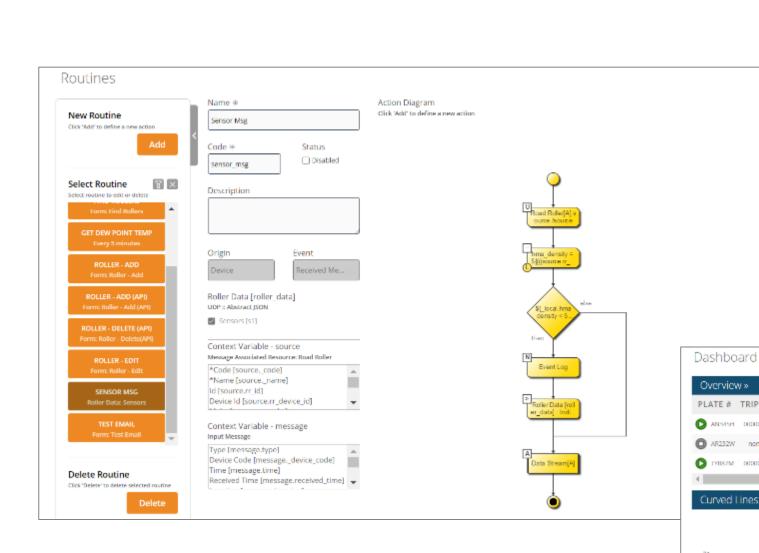
Engine Hours

Status

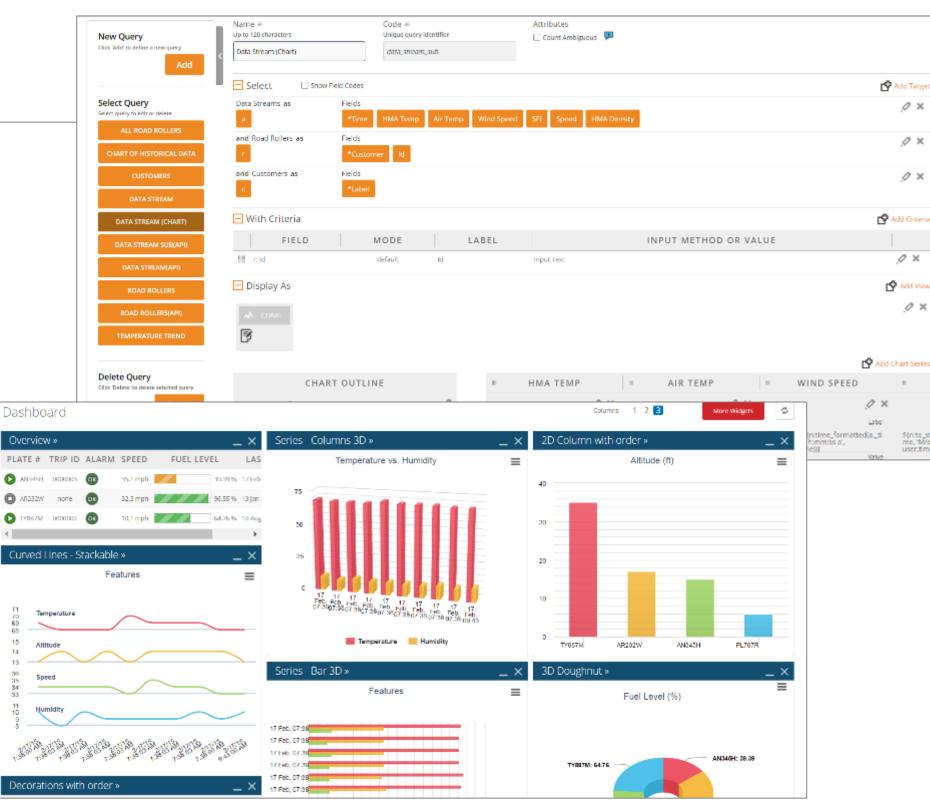




Analytics and Reports



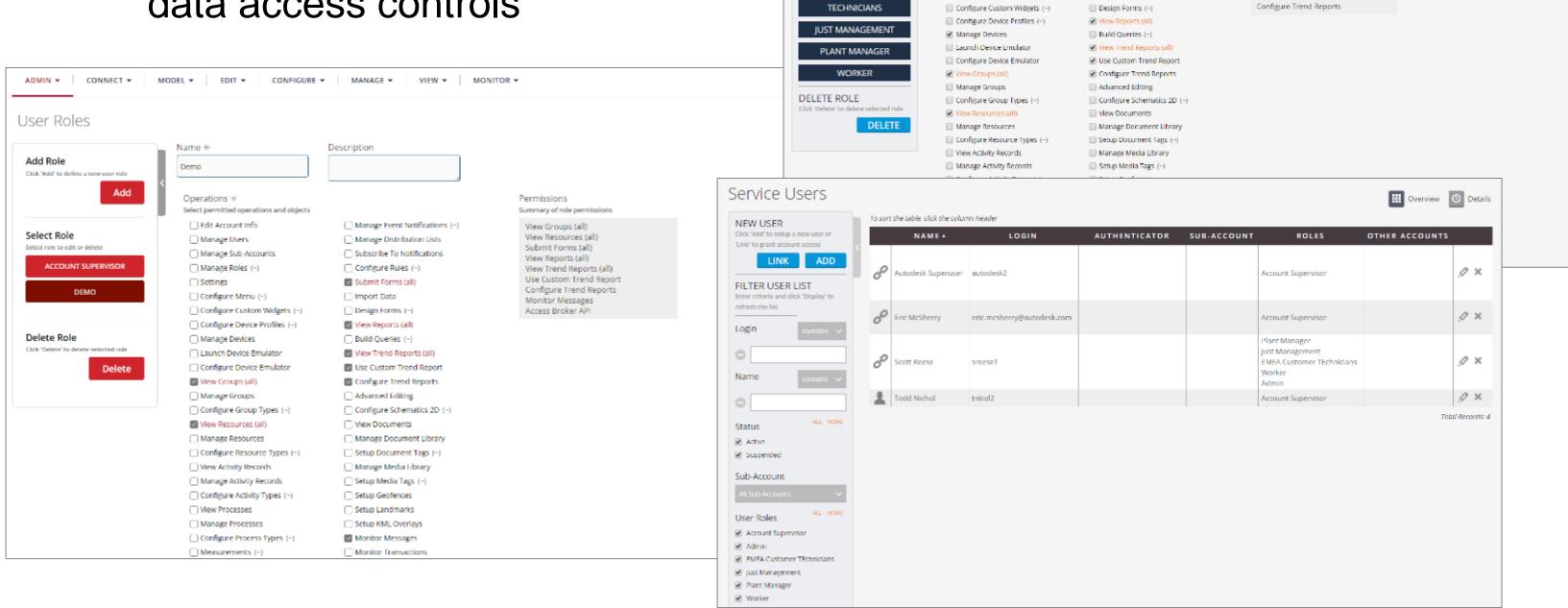
Describes how the business will use data





User Roles

Enables functional and data access controls



User Roles

Click 'Add' to define a new user role

ACCOUNT SUPERVISOR

ADMIN

EMEA CUSTOMER

Admin

Operations *

Settings

Edit Account Info

Manage Sub-Accounts

■ Manage Roles (~)

Configure Menu (-)

Manage Users

Select permitted operations and objects

ADD ROLE

SELECT ROLE



UPDATE RESET

Permissions Summary of role permissions

Manage Devices

View Groups (all)

View Resources (all)

Submit Forms (all)

View Reports (all)

View Trend Reports (all)

Use Custom Trend Report

Manage Event Notifications (-)

Manage Distribution Lists

Subscribe To Notifications

Configure Rules (~)

Submit Forms (all)

Import Data

Use Cases



- User who is involved
- Scenario what has happened?
- Actions what do you want to do as a result?



loT for Manufacturing Classes

Thursday Tuesday Wednesday You Are 8:30-9:30am 3-4pm 8-9am Here IOT15617 IOT15577 IOT15637 Building Your First IoT Planning Your Connected Getting on the Fast Track to IoT **Project Business Case Product Offering** 1-2pm 1-2:30pm IOT15559 IOT15597 Pimping Your IoT Ride Introduction to Fusion



4:45-5:45-pm IOT15657 What Connected Products

Are Doing for Us



Connect

Please Tell Us How We Did

- Your class feedback is critical. Fill out a class survey now
- Use the AU mobile app or fill out a class survey online
- Give feedback after each session
- AU speakers will get feedback in real-time

Your feedback results in better classes and a better AU experience!







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