Discover Precision

Solving for eMobility with A&D Solutions

Presented by Craig Giraud

About A&D Technology, Inc.

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A&D Technology is Headquartered in Ann Arbor, MI | US Based Development, Service & Support

1984

STARTING BUSINESS

The company began in 1984 as DSP Technology, specializing in data acquisition and control for the powertrain testing market.

1999

NEW BEGINNINGS

In 1999 DSP Technology was purchased by MTS Systems. The company then became MTS Systems Powertrain Technology Division.

2005

WORLD MARKET

A&D Technology was founded in 2005 as an American subsidiary of A&D Company, Ltd., a global manufacturer of testing and measurement equipment with headquarters in Tokyo, Japan.

NOW

THE FUTURE

With A&D Company's long history of high-accuracy measurement technology, conventional and hybrid powertrain development tools and test cell integration services, A&D has established their expertise for providing complete turnkey solutions.

- 40 year history of high-accuracy measurement technology.
- A&D has divisions in 12 countries across the globe

A&D's eMobility Solutions

- **HILS** – Hardware in the loop to shorten development cycles
- **iTest.BTS** – Battery Testing Automation
- **LabWorX Suite** – Advantages for transforming a collection of test systems into one managed lab

HIL Simulation| eMobility Solutions

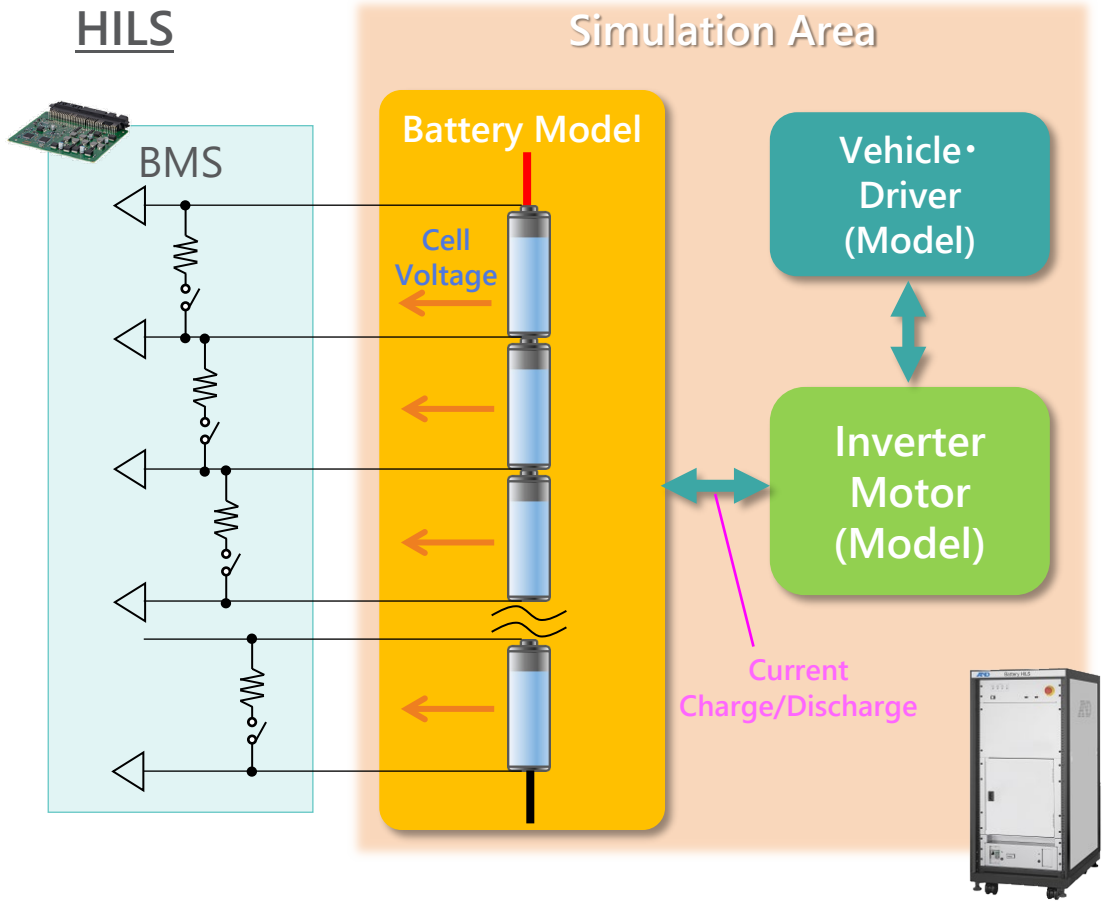
Battery HILS

✓ Simulate battery for developing and validating a BMS (Battery Management System)

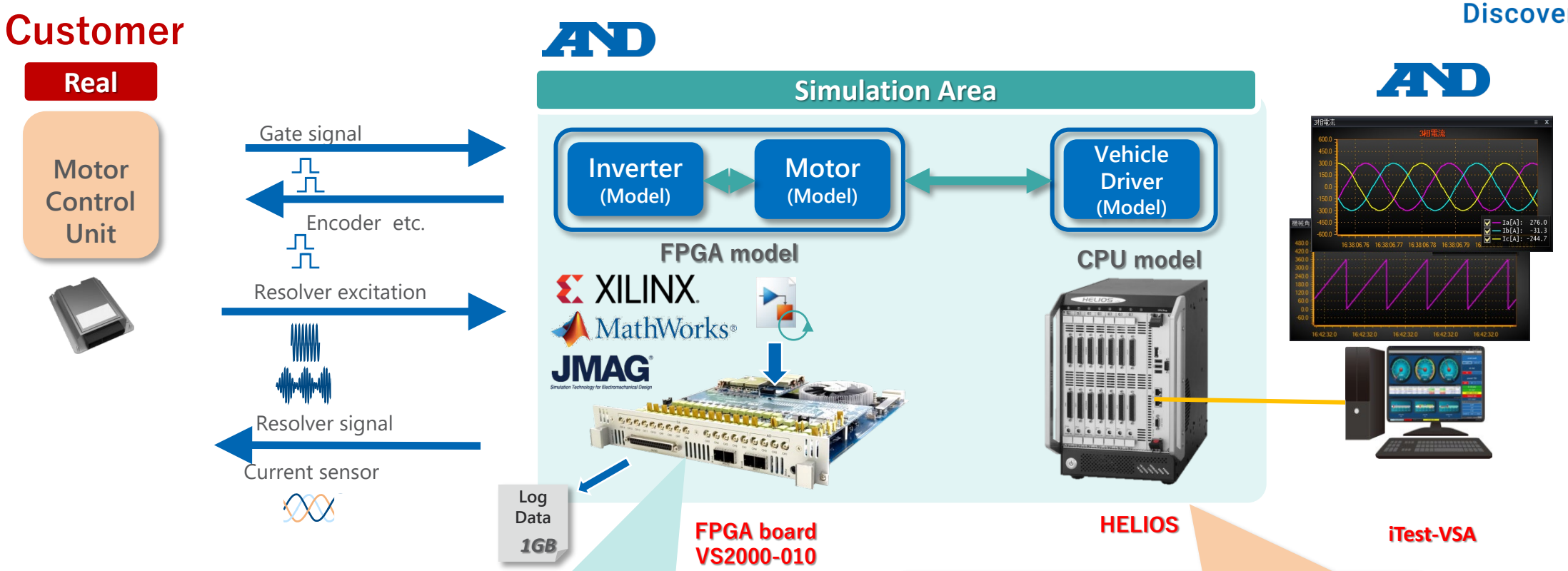
Features
- Software control of cell voltage and fault state for up to 192 cells
- Noise and temperature simulation
- Output voltage and current monitoring
- Built-in test automation tool for running various test patterns
- Supports ASAM XiL and ECU-Test from TraceTronic.
- Runs MATLAB®/Simulink® models and 3rd party simulation tools such as CarSim®, GT-Suite, Autonomie etc...

Output
- Cell Voltage (MAX192Ch):Vcel [V]
- State of Charge: SOC [%]
- State of Health: SOH [%] (optional)
- Cell temperature.: Tcel [° C]
- Current full charge capacity: FCC [Ah] (optional)
- Remaining capacity: RC [Ah]

Setting and Input
- Initial cell voltage: Vcel [V]
- Initial State of Charge: SOC [%]
- Initial health: SOH [%] (optional)
- Ambient temperature.: Tcel [° C]
- Full charge capacity when new: DC [Ah]



Motor HILS features



FPGA board
- VS2000-010 board with FPGA for Motor/Inverter high speed simulation
- High speed I/O

HELIOS HILS simulator capabilities
- Run CPU model
- Simulate devices (other than Motor)
  - ✓ Vehicle/Driver
  - ✓ Temperature sensor
  - ✓ Communication etc.

iTest BTS | Battery Testing Automation

iTest.BTS Solution

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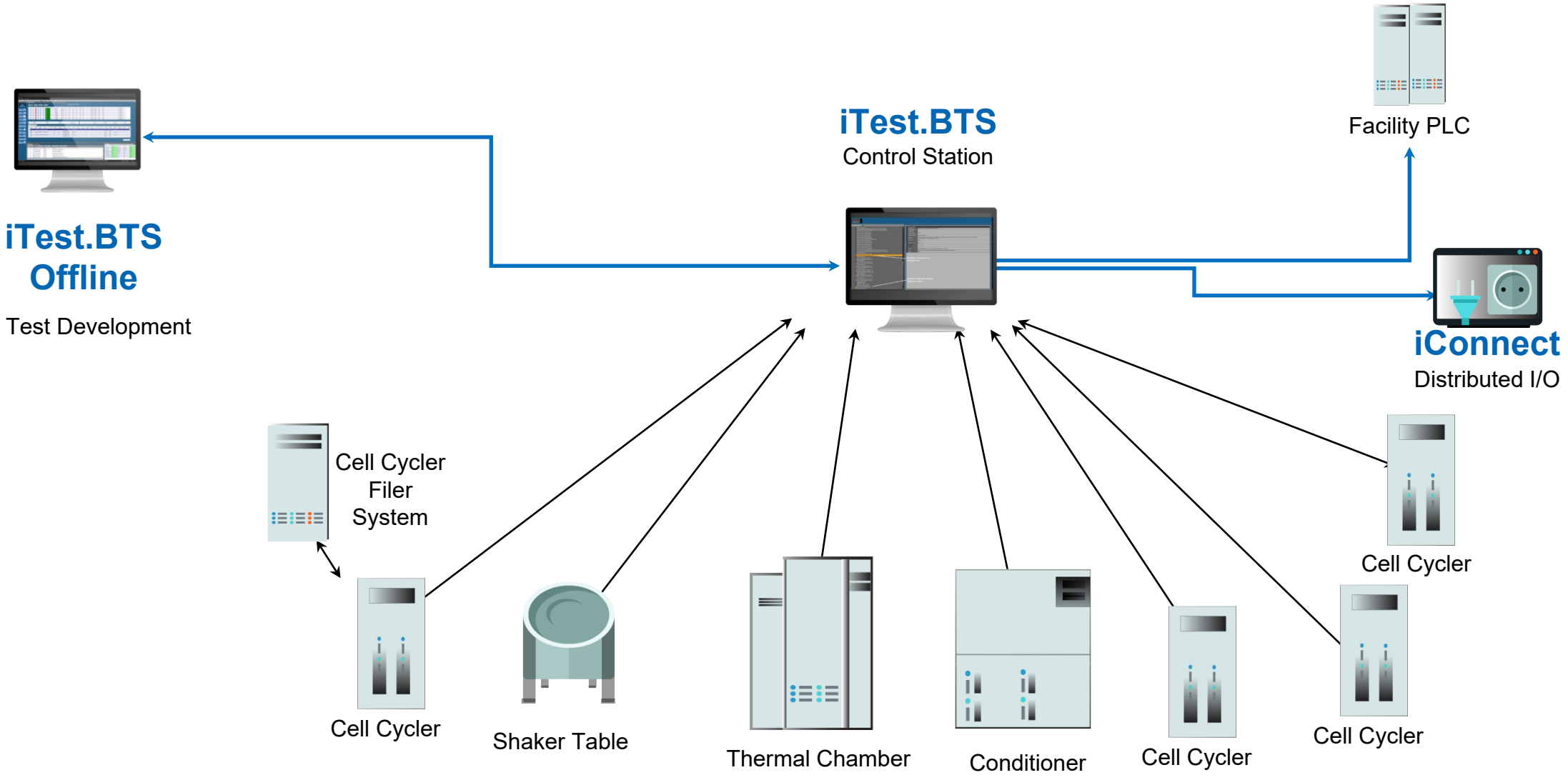
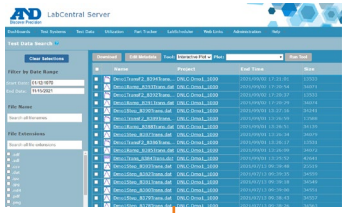
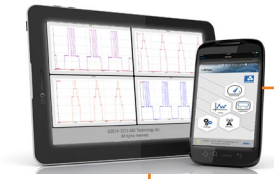


LabWorX | Lab Automation & Monitoring

LabWorX





Cell Network

Data Center or Cloud

LabReporter

LabCentral

Lab, Data Center or Cloud

SMS Modem

LabMinder

Lab

Network Infrastructure

LabAgent	LabAgent	LabAgent		LabAgent	LabAgent	iViewBox
iTest Plugin	iTest Plugin	iTest Plugin		iTest Plugin	Other Plugin	DIO/CAN
iTest	iTest	iTest	…	iTest	Other	Other
Test System 1	Test System 2	Test System 3		Test System X	3rd Party Test System	3rd Party Test System

eMobility Installations 300+ Worldwide

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Thank you

Questions, contact Craig Giraud cgiraud@aanddtech.com