



JOHN DEERE

NOTHING RUNS LIKE A DEERE

Agronomic Data Types

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Agenda

Wednesday, January 28, 2020

- Overview of terminology
- Learn what John Deere Operations Center supports
- Learn what each solution can do, along with pros and cons
 - ISOXML, ADAPT, and MyJohnDeere API's
- Understand how to decide which solution to use
- Questions and Feedback

Definitions

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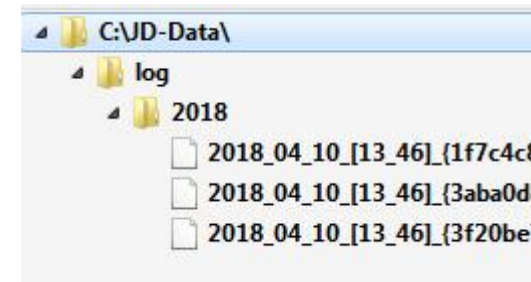
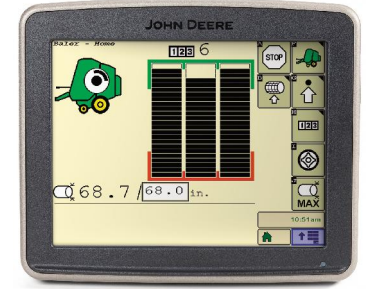
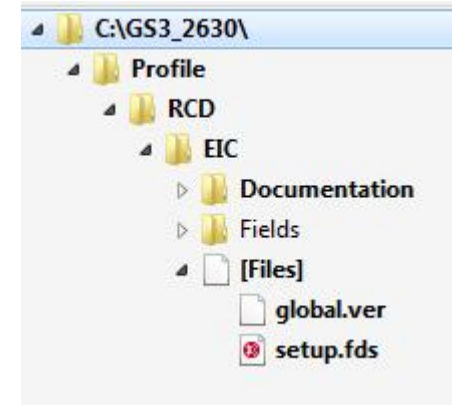
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What is a datacard?

- Data ... the way a display wants to see it
- Each display model has its own format
 - Defined folder structure
 - Defined file formats
- MyJohnDeere calls a zipped datacard a “file”

<input type="checkbox"/>	Name	Type	Size
<input type="checkbox"/>	JD-Data.zip	Doc	602.4 KB
<input type="checkbox"/>	GS3_2630.zip	Doc	743.9 KB



Delivery Methods

- **USB - Datacards**

Requires transporting physical media

- **Cell Modem - Datacards**

Requires cell connection

Saves driving time

- **Cell Modem - Data Streaming**

Requires cell connection

Granular pieces of data – No Datacards

What does Operations Center Support?

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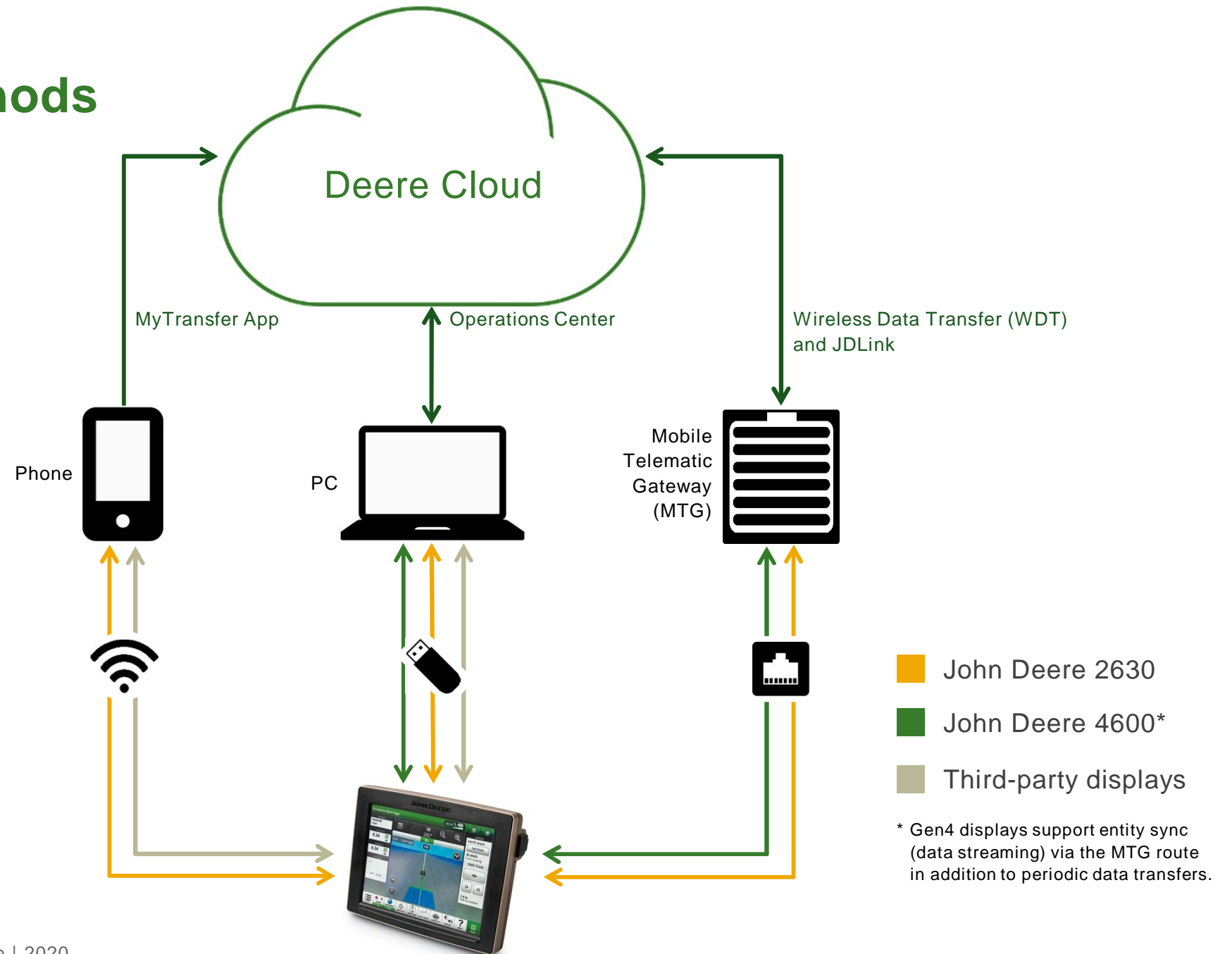
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Supported Data Types

...as of January 2020

	Setup	Documentation
Deere GS2 / GS3	✓	✓
Deere 4600 series	✓	✓
ESRI Shapefile	N/A	✓ (export)
ADAPT Datacard	✓	✓
ISOXML	Coming soon	
AgLeader	✓ (import)	✓ (import)
Raven	✓ (import)	✓ (import)
Trimble	✓ (import)	✓ (import)
Precision Planting	✓ (import)	✓ (import)

Delivery Methods





What can each solution do?

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ISOXML

- Data standard: File structures and schemas
 - No supporting SDK's
 - You still need a delivery method
- Well-understood standard in the EU
- Supported on Deere's 2630 and Gen4 displays
- Limited scope
 - Cannot store all types of agronomic data
 - No support for soil data
 - PAIL for irrigation data

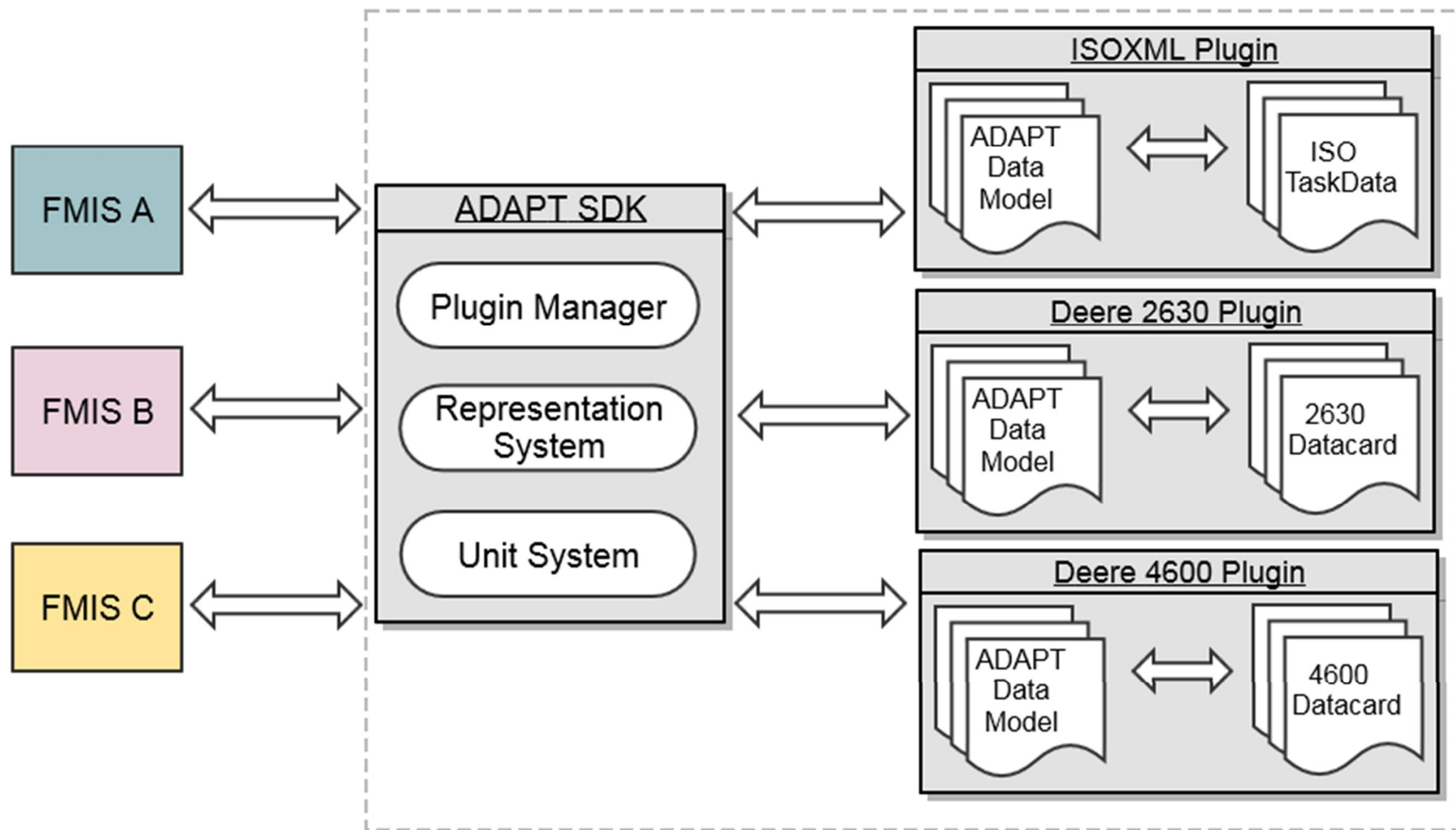
ADAPT

<https://adaptframework.org/>

<https://github.com/adapt/>

<http://aggateway.org/>

- SDK (Software Development Kit)
 - Set of libraries to abstract away the details of specific data formats
- Also a data standard
- Developed in collaboration with AgGateway and industry companies
- Converts data between various datacard formats and the ADAPT data model



ADAPT

- ADAPT replaces EIC as Deere's offline SDK
- Feedback: ADAPT is easier to integrate than EIC
- You can run both in parallel if you need GS1 support

Documentation support by display model:

	GS1 Brownbox	GS2 2600	GS2 1800	GS3 2630	GS3 Command Center	GS4 Command Center	GS4 4600
EIC	✓	✓	✓	✓	✓	✗	✗
ADAPT	✗	✓	✓	✓	✓	✓	✓

ADAPT – Pros and Cons

- Requires .NET or Mono runtime
- Presents data as it sits on the datacard
 - You can apply custom algorithms to the raw data
 - Custom algorithms may not match John Deere Operations Center
- Expensive to process
- Supports all the data attributes EIC does
 - ...plus multi-OEM support

MyJohnDeere API's

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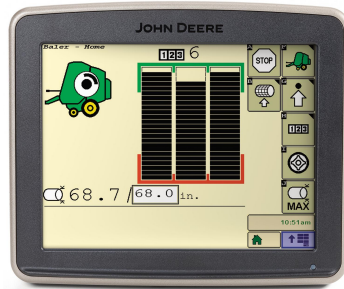
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MyJohnDeere API's – Multiple Ways To Integrate

- Use Files API to download datacards, use ADAPT to process them
- This gives you everything, but it's expensive

GS3 2630



1 hz * 16 sections = 16 measurements
per layer per second

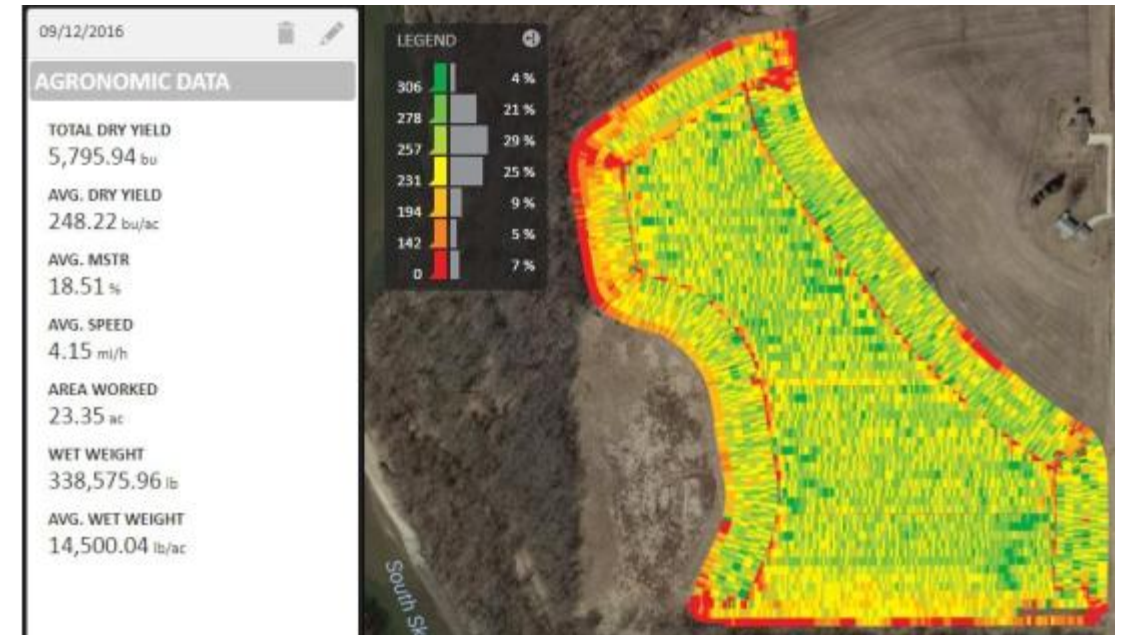
GS4 4600



5 hz * 90 rows = 450 measurements
per layer per second
...also, it records more layers

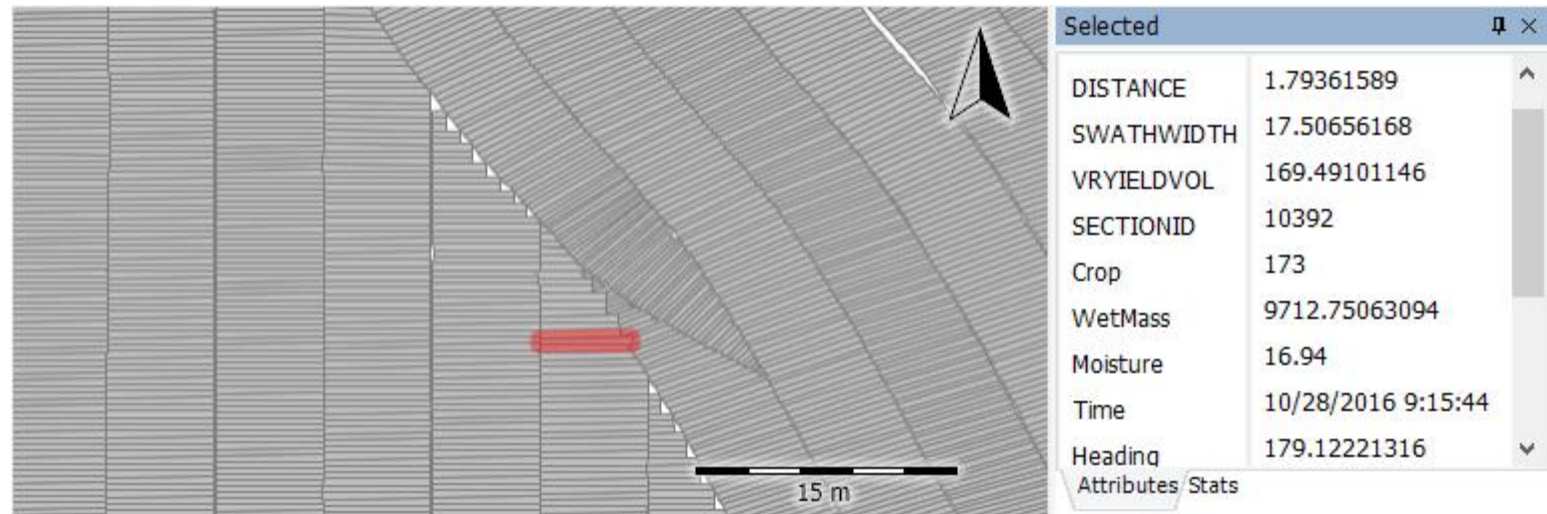
MyJohnDeere API's – Multiple Ways To Integrate

- Use multiple API's to retrieve processed data
- Field Details: Fields, Boundaries, Flags, Guidance Lines
- Products: Crop Varieties, Chemicals, Tank Mixes
- Machines & Machine Monitoring
- FieldOperations: Maps, Totals, and Metadata
- See what's available at developer.deere.com

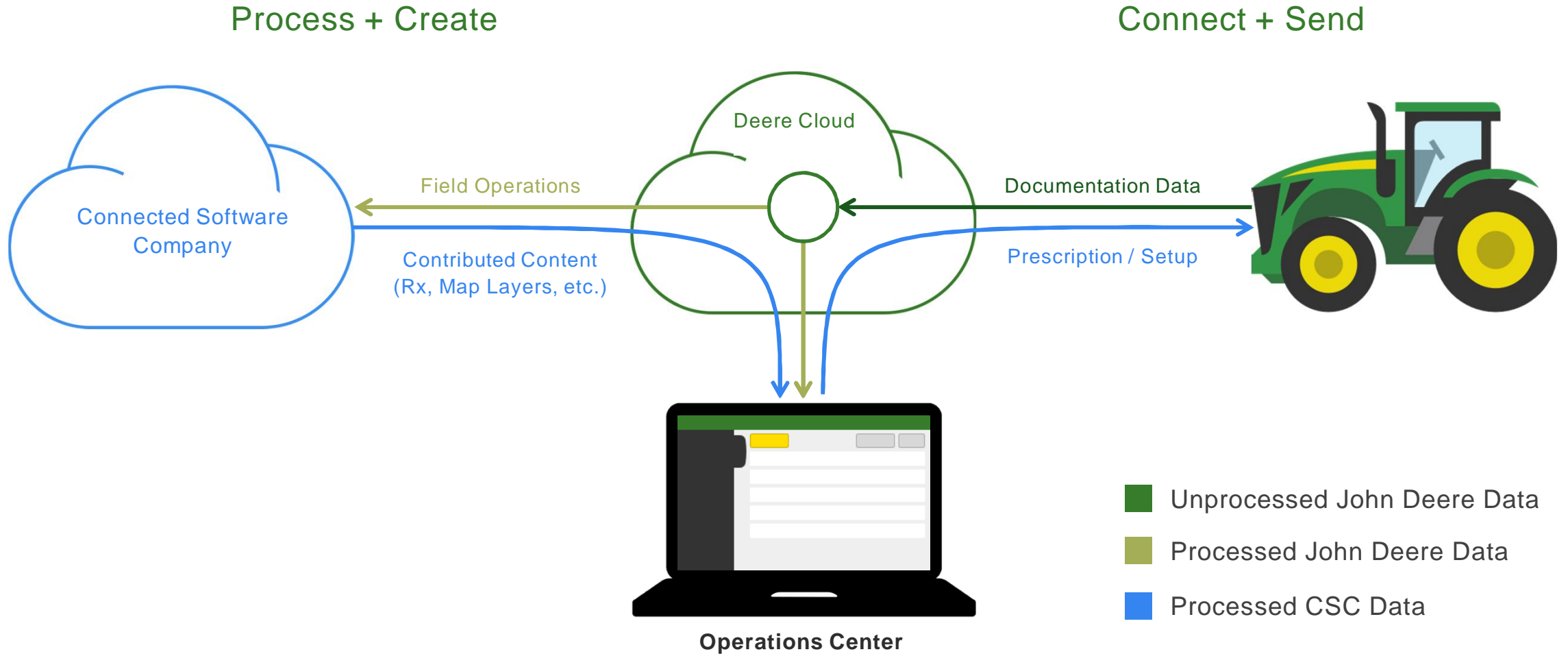


MyJohnDeere API's – Multiple Ways To Integrate

- Shapefile Export: Point-by-point data for a FieldOperation
- Matches what customers see in Operations Center
- Available in Point or Polygon shapes
- Available in multiple data resolutions



MyJohnDeere API's – Data Flow



MyJohnDeere API's – Pros and Cons

- Language and platform agnostic
- Easier update process
 - No need to ship new binaries if the 4600 extends its data format
- Data consistency: Stay in sync
 - Data Subscription Service makes this easy and inexpensive
- Get all the data from one place
 - Field Operations can be spread across multiple files
 - Gen4 DataSync results in more files than ever
 - Users can share contributed data layers
- Not all data is available yet



Which Should You Use?

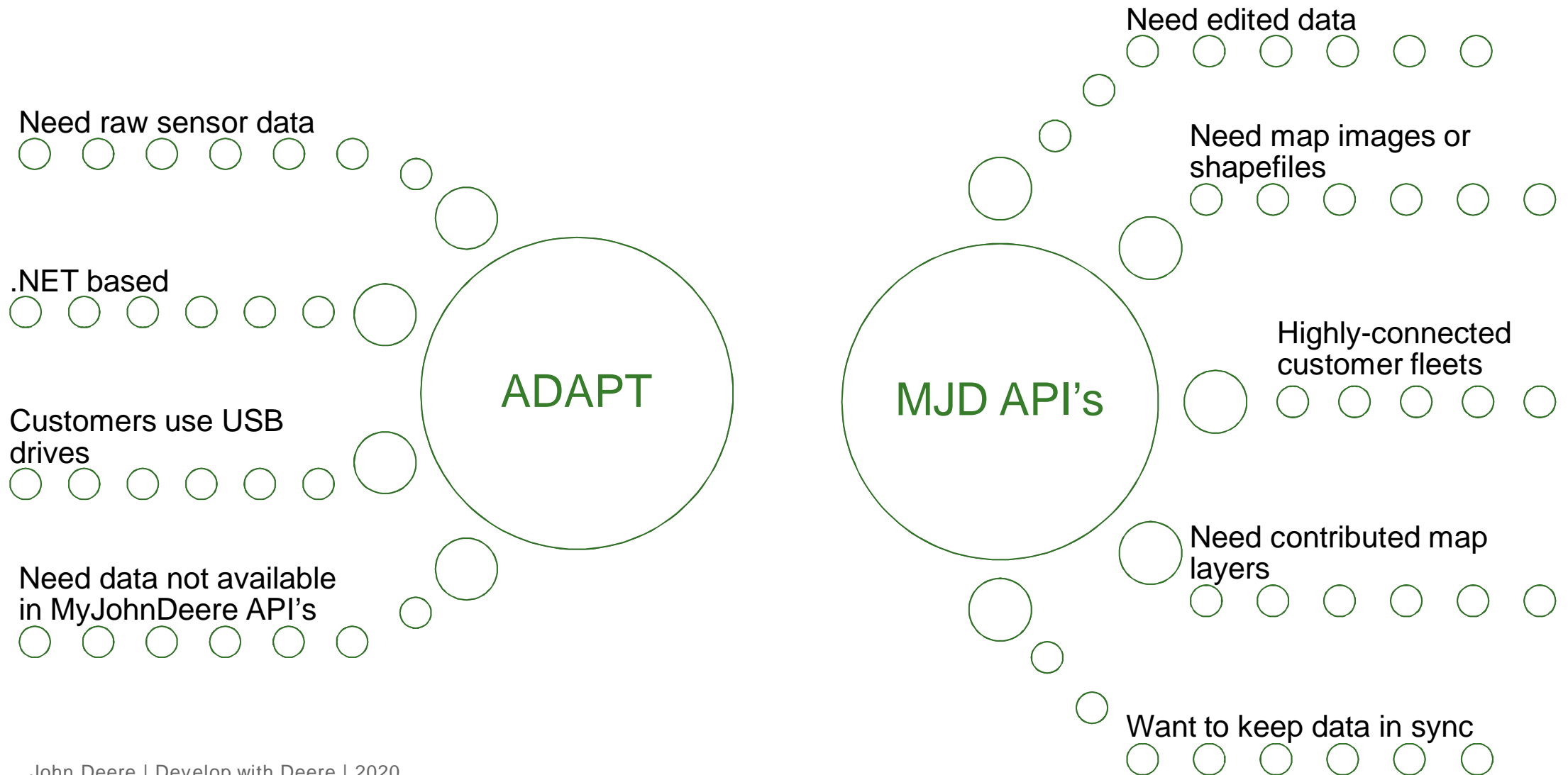
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It Depends



Q&A / Feedback

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