

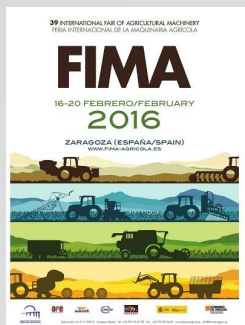


# TRACTOR IMPLEMENT INNOVATIONS

*Innovación en el sistema  
tractor-aperos*

**Dr. Martin Kremmer**

European Technology Innovation Center  
John Deere GmbH & Co. KG, Germany

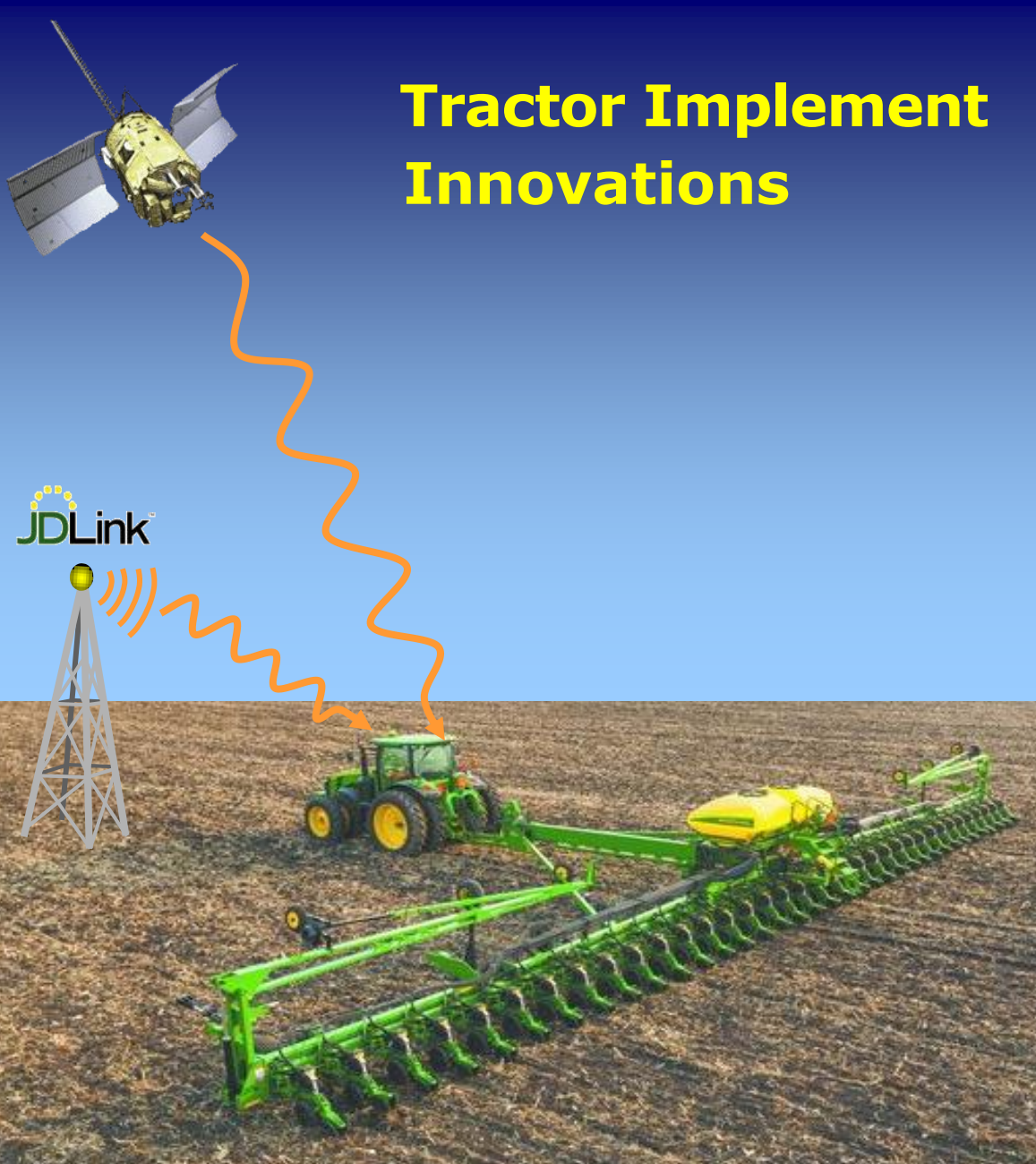


**JOHN DEERE**

# Tractor Implement Innovations

## CONTENT

The last Century  
The last two Decades  
Recent Examples  
A look ahead



# Tractor Implement Innovations

## The last Century

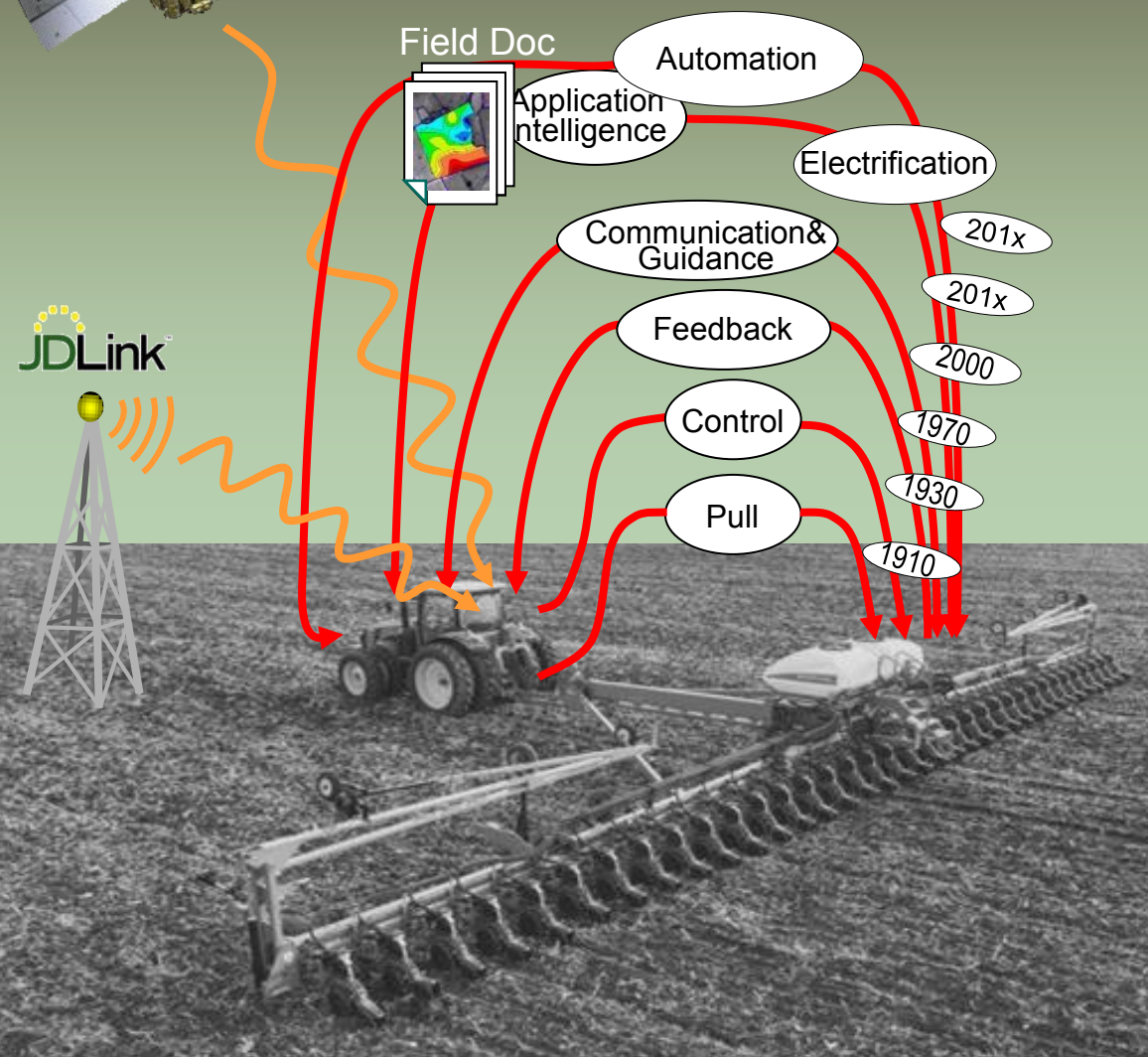
- **Subsystems**





# Tractor Implement Innovations

## The last Century

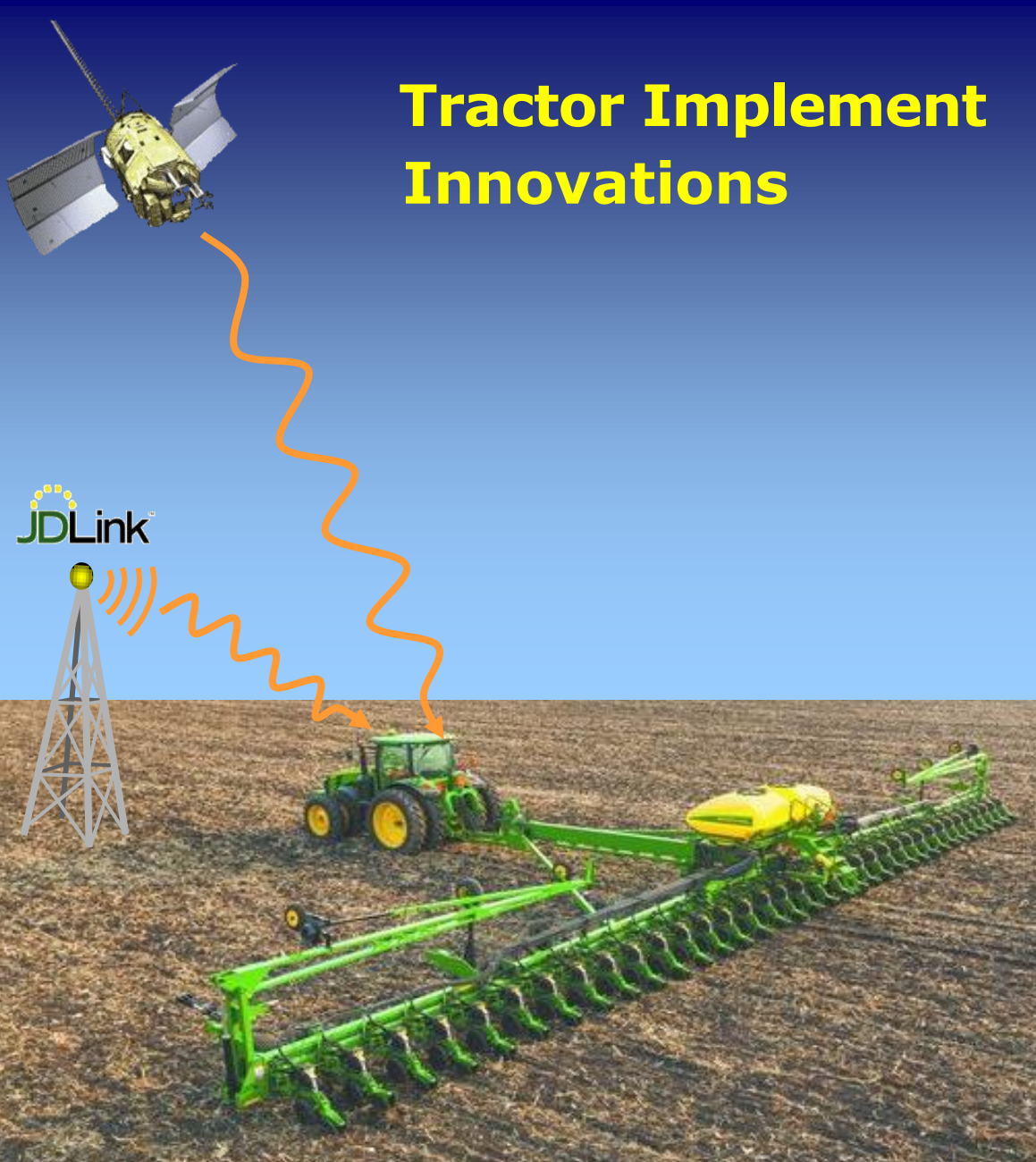


- **Subsystems**

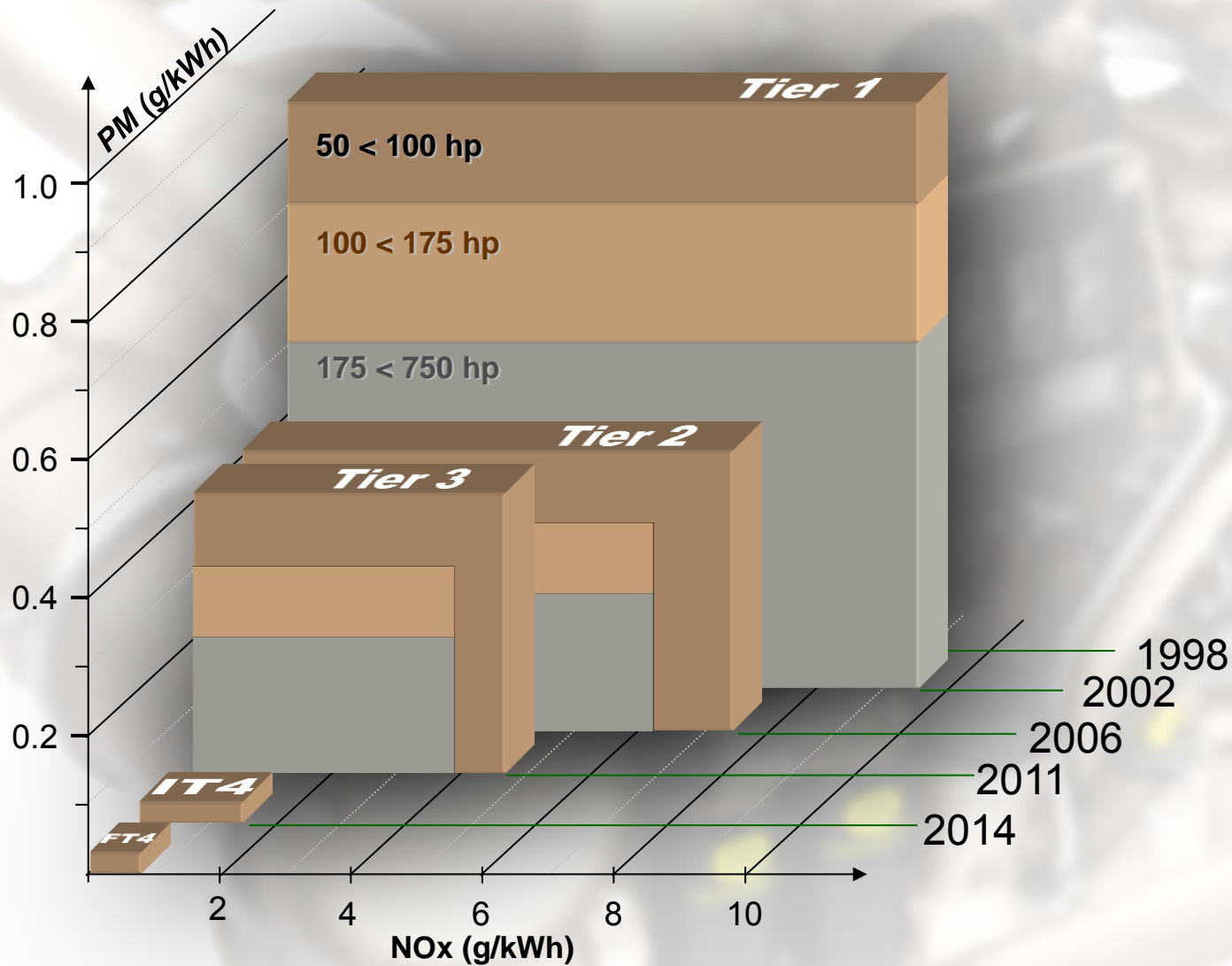
# Tractor Implement Innovations

The last two decades

- Emission Regulations



# Legal Requirements



# Example IT4 – Challenge and Opportunity

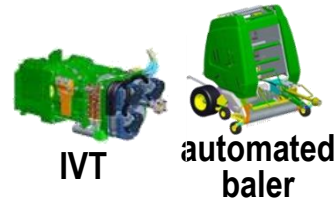
## Legal Impact



## Fuel Efficiency



## Productivity



## Comfort



## Technology Leadership Image

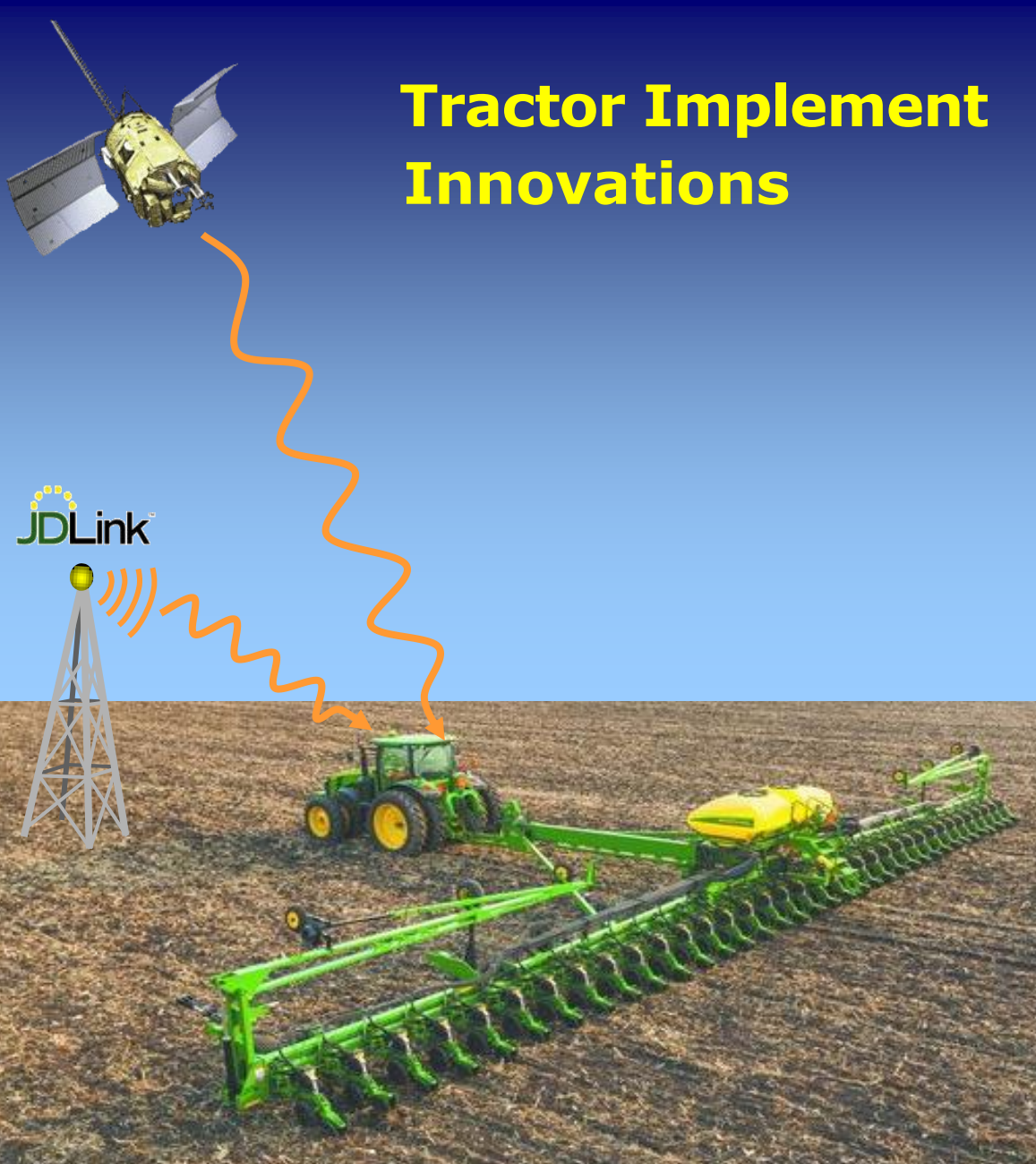




# Tractor Implement Innovations

## Recent Examples

- Subsystems
- Emission Regulations
- **Electrification**
- **Automation and autonomous Operation**
- **Tractor Impl. Solutions**





# Example1 – ELECTRIFICATION

## John Deere *BatteryBoost*



### ***Grid-Plug-in Hybrid System***

Battery Exchange Concept

Renewable Energy Utilisation

Sustainability (Self-supplied Energy)

Electrical Engine Boost for lower hp tractors



# Example2 – AUTOMATION

## John Deere *AutoConnect*

### **AutoBackup**

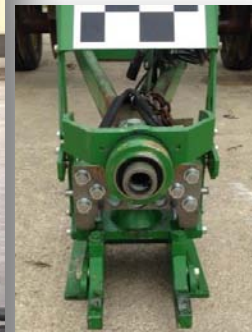
No driver interaction  
Transmission control  
Steering control

### **AutoConnect**

Mechanics  
PTO  
Hydraulics  
Pneumatics  
Electrics  
ISOBUS

### **AutoSetup**

ISOBUS implements



# Example3 – TRACTOR IMPLEMENT SOLUTIONS

## John Deere *Exact Emerge*



### ***Integrated High Performance Corn Planting Solution***

#### **Electrified Tractor-Implement Combination**

Seed Metering & Brush Belt Delivery

#### **Advanced Precision Farming Solution**

WDS (Wireless Data Server), RDA, HD Mapping

#### **Quality System & Infield Automation**





# John Deere Recent Innovation AWARDS 2015/16

**3 Outstanding Technical Innovation**

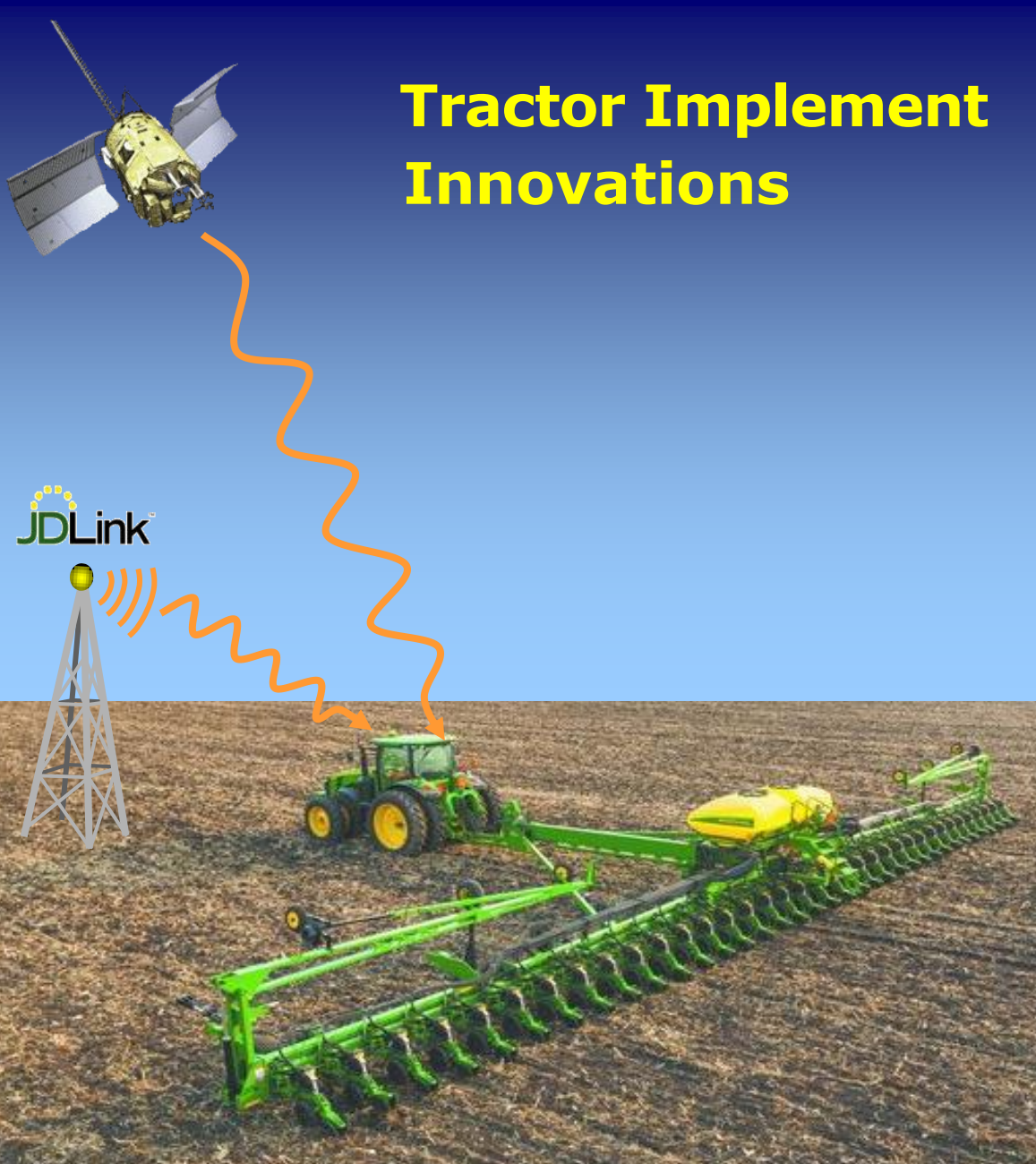
**7 Technical Innovations**

**1 Special Mention**



# Tractor Implement Innovations

## A Look ahead



- Tractor & Subsystems
- Emission Regulations
- Electrification
- Automation
- Tractor Implement Solutions
- A look ahead

# Tractor Implement Innovations in the near future



## Getting the most out of each machine:

Further developed self-optimizing machines that use all available capacity while preserve the maximum yield potential



## Multiple machines working together:

A farming operation that operates like a world class factory, getting the right inputs, in the right place, at the right time



## Make decisions enabled by information:

Seamless flow of data between the operation, decision makers, and back to the operation, enabling customers to meet their production system goals

**MACHINE OPTIMIZATION**

**LOGISTICS OPTIMIZATION**

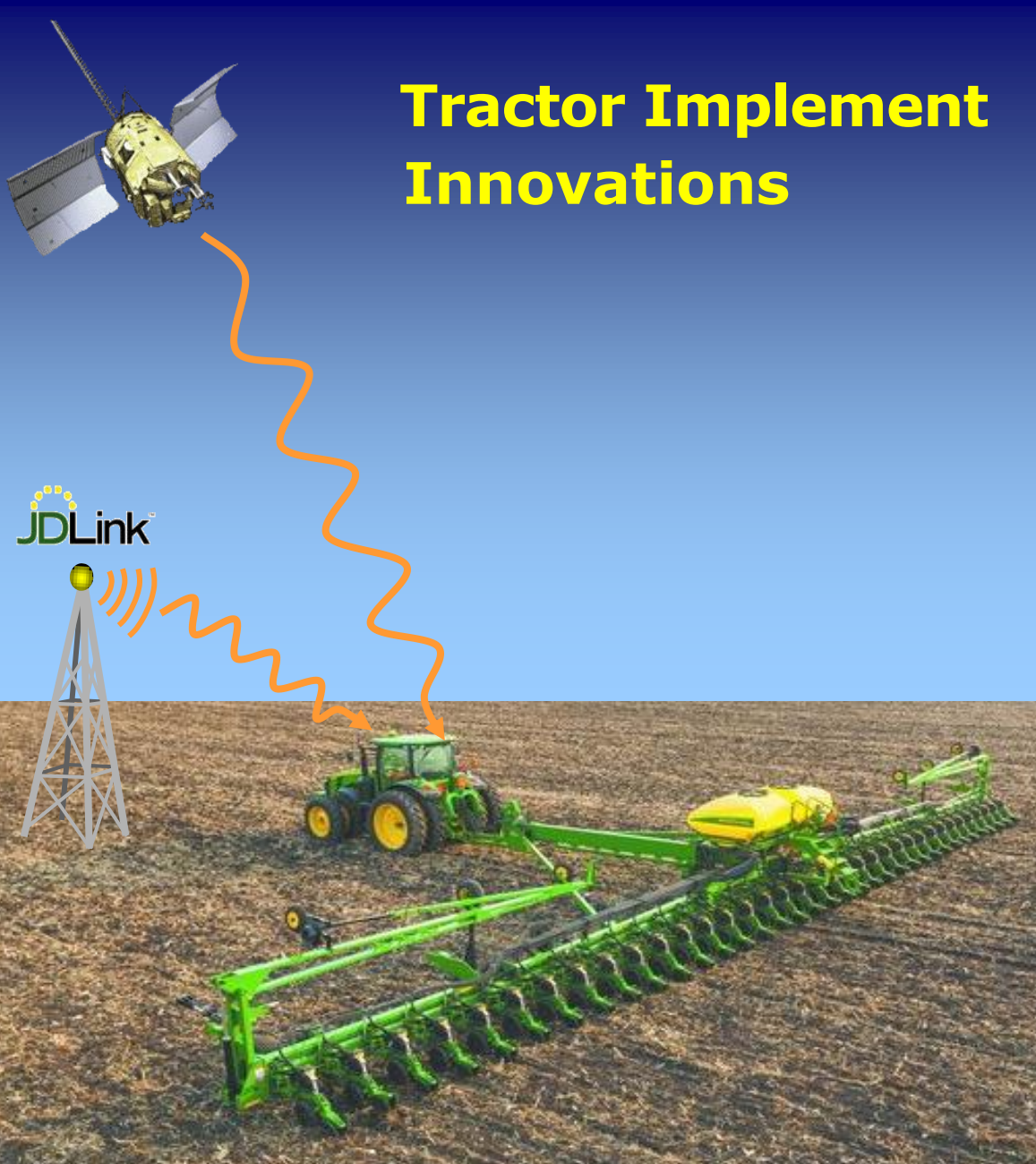
**AG DECISION SUPPORT**



# Tractor Implement Innovations

## Summary

- Tractor & Subsystems
- Emission Regulations
- Electrification
- Automation
- Tractor Implement Solutions
- A look ahead
- Farm Forward



# Farm Forward



**JOHN DEERE**