

Systèmes de production en réseau, autonomie et gestion de l'information - éléments déterminants des futures machines agricoles

Prof. Dr.-Ing. Peter Pickel, Deenre

www.agridea.ch | info@agridea.ch

Lindau Eschikon 28 | CH-8315 Lindau | T +41 (0)52 354 97 00
Lausanne Jordils 1 | CP 1080 | CH-1001 Lausanne | T +41 (0)21 619 44 00
Cadenazzo A Ramél 18 | CH-6593 Cadenazzo | T +41 (0)91 858 19 66
ISO 9001 | IQNet

**6G-TakeOff**

 **JOHN DEERE**

SPONSORED BY THE



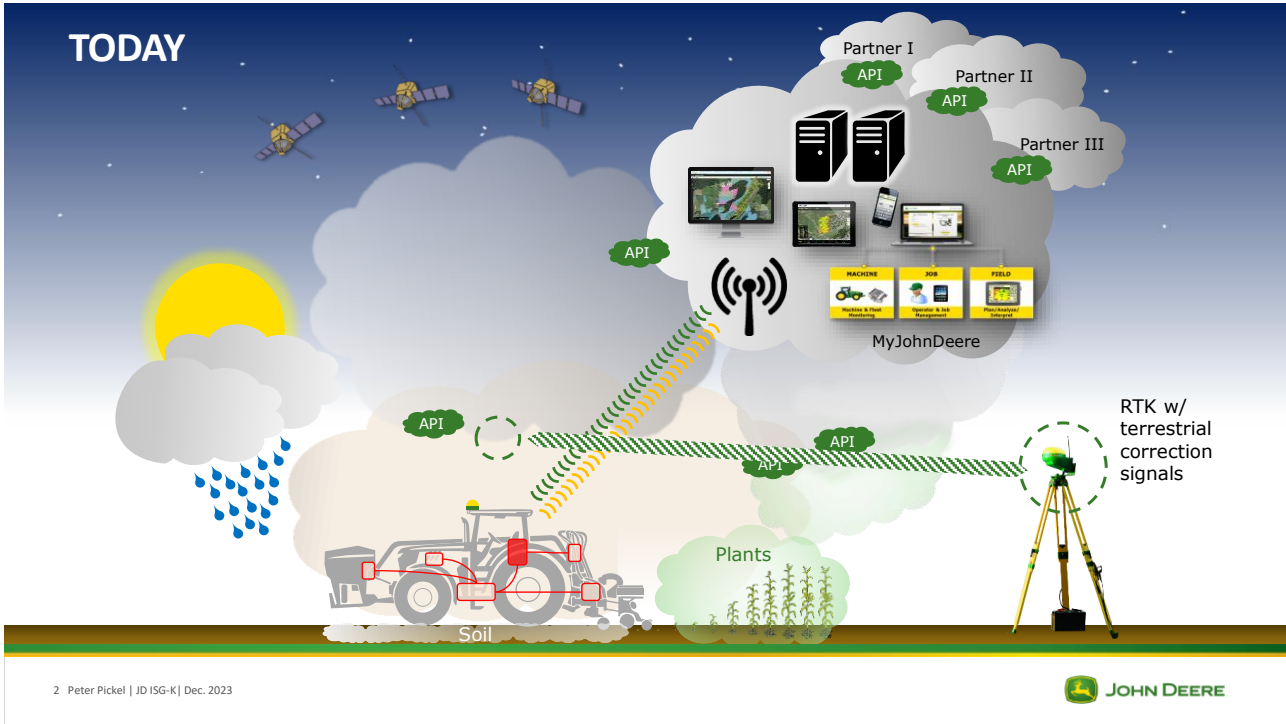
Federal Ministry
of Education
and Research

**Networked production systems, autonomy and
information management - key elements of future
agricultural machinery**



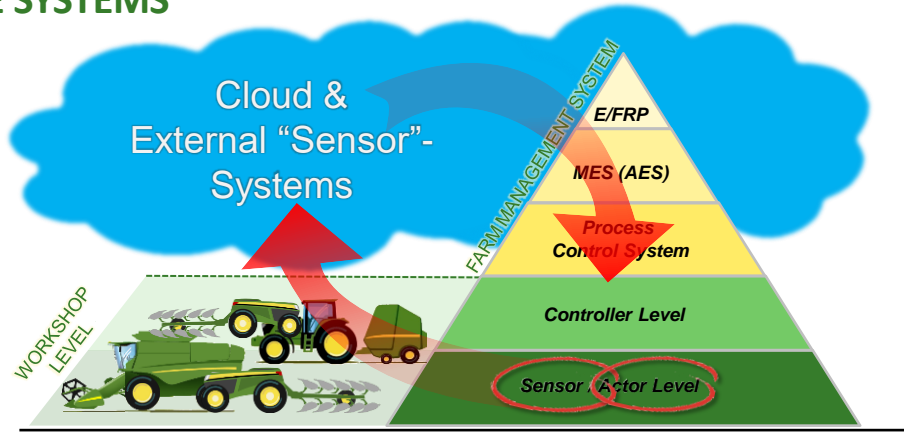
Prof. Dr.-Ing. Peter Pickel

1



2

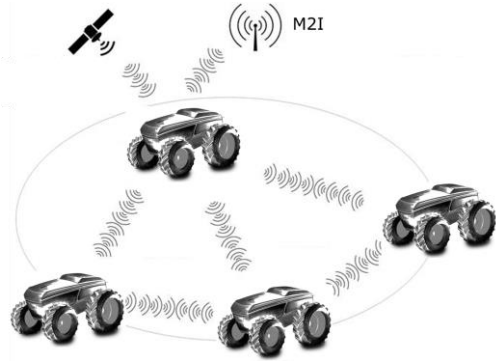
FUTURE SYSTEMS



Adaptive Agricultural Production Systems providing

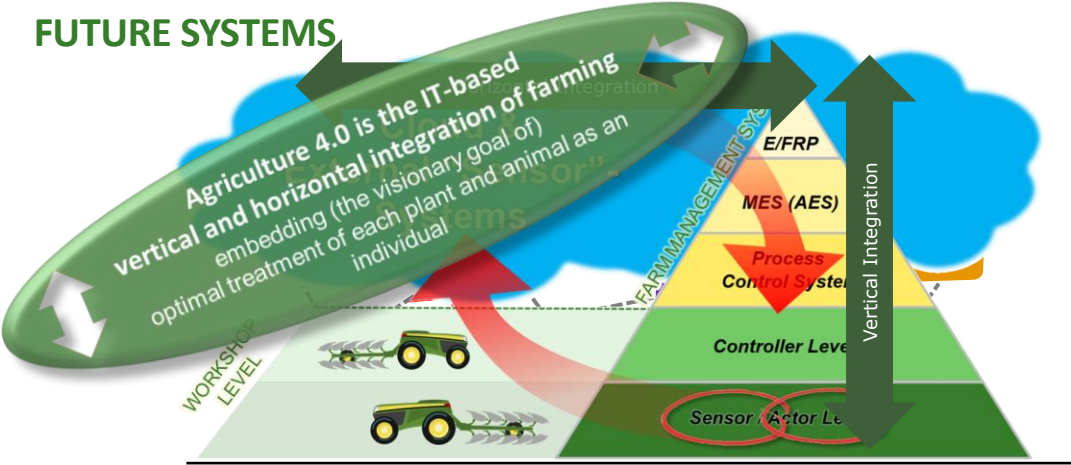
- Technical intelligence (such as self optimization)
- Self reconfiguration in dynamic networks
- Defect compensation / zero defect operation

6G – AUTOMATION / AUTONOMY ENABLER



Connectivity

- Internet of things, communication between everything everywhere



Adaptive Agricultural Production Systems becoming part of

- Technological, intelligent, self-organizing production
- Self-organizing, dynamic networks
- Being connected in a Mesh-App and Service Architecture



Farm operation example

Historic vision of agricultural processes
controlling machinery

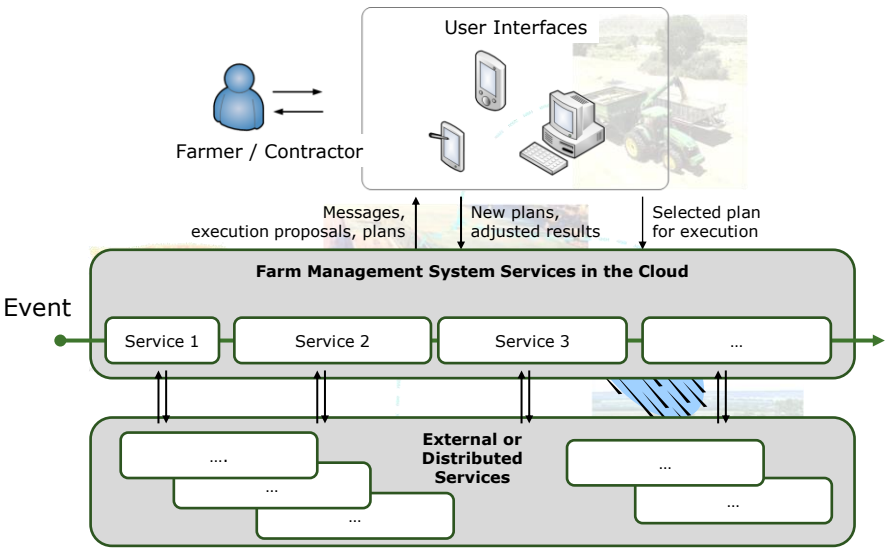


Source: Dr.-Ing. Klaus Hahn (modified)

7 | JDE TIC | Prof. Dr.- Ing. Peter Pickel | Jan. 2014



Farm operation example



8 | Peter Pickel | JD ISG-K | Dec. 2023





9

TRENDS AND VISIONS

- AI based and other services on the go
- High precision closed loop control of fleets of autonomous machines
- High speed low latency connectivity
- (eg. by 6G NTN)
- Fleet management with central operator station anywhere
- Platooning on street

