

**TECHNICAL LEAD ON  
MODULE FOR THE WORLD'S  
MOST TECHNOLOGICAL  
COMBINE HARVESTER**



Photo: AGCO

**AGCO, one of the world's largest manufacturers of agricultural machinery, is on the market with the IDEAL Massey Ferguson Combine Harvester – a machine with the latest innovative and highly efficient harvesting technology. DIS has been technical lead in developing and testing the cleaning system.**

Last time AGCO built a brand-new combine harvester was in the late 80's, but they have now announced their biggest development project ever, with a budget of over \$200 million – The IDEAL Massey Ferguson / Fendt Combine Harvester. A development project that includes almost all engineering disciplines.

Typically, development is done on existing machines, but the IDEAL Massey Ferguson / Fendt is a brand-new combine harvester with 100 percent new content using knowledge and different concepts from previous models.

- The machines we have previously produced have been adapted to local conditions. However, what works well in Europe does not necessarily work well in North America. With IDEAL, we wanted to develop a machine with a common platform with an option to be built and produced at our production locations in Italy, the US and Brazil, and with the ability to be used in all countries, says Morten Bilde, Development Director of AGCO's Development Department in Randers.

**Development divided into modules**

The development of the combine harvester was divided into 12 modules, where the

department in Randers was responsible for the heart of the machine; the processor and the cleaning system, where all the threshing, separating and cleaning of the crop takes place. DIS was technical lead on the development of the cleaning system, and responsible for the delivery of the technical solutions and coordination between the engineers in the departments in Denmark, Italy, Germany, Slovakia and South America.

In the development of the cleaning system there was a strong focus on cost and weight, where the choice of materials became an important element. In this connection, a brand-new plastic blower was developed, which is far more efficient than the former steel blower.

AGCO rely on the ability to test the functions in practice as it is difficult to calculate and simulate the effect of different designs. DIS was also responsible for the development and test work in the AGCO test lab.

- It has taken almost five years to develop the combine harvester and it has been a process with many challenges. It has been important to us to have had such close cooperation with DIS throughout the process and that we have been able to draw on their knowledge within new technologies, says Morten Bilde, who has announced IDEAL to be the world's most technological combine harvester.

The new combine harvester has already received great acknowledgments such as "Machine of the Year" and "The Innovation Award" at the Agritechnica Exhibition in Hannover, Germany, and the first models

with the largest built-in grain tanks capacity in the European market, the fastest draining speed and the largest threshing range have already been put into use.

**About AGCO**

AGCO, headquartered in Atlanta USA, is one of the world's largest full-line producers of agricultural machinery. AGCO cover a variety of brands including Massey Ferguson, Fendt, Valtra, Challenger, GSI, Cimbria and others. AGCO A/S in Randers, Denmark, is AGCO's Center for Research and Advanced Engineering within harvesting products.

**DIS | NEWSLETTER  
MARCH 2018**

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# THE INDUSTRY 4-WEEK

## WAS AN EYE OPENER

**At DIS we have decided to help Danish companies enter the world of Industry 4.0 safely. Therefore, we made week 4 into Industry 4-week - a week that offered lots of inspiration, hands-on experience and knowledge sharing.**

It is always nerve wrecking to invite guests. How many will show up? And will they enjoy the event? And to say the least, it went well on both parameters. Overall, there were more participants during the week than we had hoped for and the reactions were consistently positive. For some, the event was a definite eye opener, which was obvious during the breaks where discussions were lively.

### The practical approach confirmed

We were confirmed in our belief that in many companies out there, there is a need for a practical approach to Industry 4.0, which is where we step in. A practical approach was also the reason why we offered a Tech-Try-Out, where participants could get hands-on experience with the technologies, and the mini conference speakers were all people with practical experience using cases from their own work life, where they work with one or more aspects of Industry 4.0. The week ended with our participation as a partner in the Hitachi Vantara Forum in Copenhagen, Denmark - a partnership where we are working on some very exciting I4-projects.

“

I take back a good impression of what is happening right now. Innovation is worth nothing if you only talk about it. The organization must embrace it: The entire value-chain must be evaluated from the idea phase until the finished product is in the box.

”

*Tim Damgaard Christensen,  
Independent Consultant*



“

I work in the media industry and I am very curious. Many of these technologies have already been invented, but now we are figuring out how we make the most of them. At the same time, it has been a great way to meet new companies.

”

*Ian Nettelfield,  
Project Manager, Danmon Group*



“

I collect knowledge and keep myself updated. The practical approach is very cool. Specific tools are so much better than empty talk.

”

*Linda Lagoni,  
Design Consultant,  
D2i - Design to Innovate*





# A NOT-SO-MINI - MINI CONFERENCE

**The second day in the 14-week was dedicated to a mini conference, but with 20 exhibitors and approximately three times as many participants it was not so mini after all.**

The purpose of the conference was to give a broad overview of what to do with Industry 4.0 right now. That is also why, as soon as you walked in the door, you were met by a couple of automated guided vehicles (AGVs) from MiR and OMRON who seamlessly maneuvered through the crowds. Johnny Ryser, Partner at DIS, then made a short and concise introduction to what Industry 4.0 is all about: digitization. He then passed the word to the speakers, who each had 15 minutes to present their cases on Industry 4.0.

A great variety of industries were covered, in addition to the already mentioned robot manufacturers, topics as diverse as oil filtration systems, data centers, software for manufacturing design, soy protein enrichment and 3D print of metal parts were covered, before we summed it all up.

### What did we learn?

Despite the widely different backgrounds of the speakers, there were still some repeats. For example, the change from selling

a straight-up product to selling a service, i.e. a subscription model. Also worth noticing was the presence of a general optimism. Where the media's focus on robots and digitization often includes us all getting unemployed, the conference helped create a different picture: Robots save costs for monotonous and uniform tasks and will contribute to creating more specialized jobs in Denmark.

If, at the same time, we create intelligent solutions here at home, our customers will become competitive and then so will we. A good example: Abena from Southern Denmark have just introduced the first intelligent diaper, which will notify the caregivers when wet. Suddenly, Abena go from delivering a generic product to delivering a unique service, which over time can be expanded to delivering additional health data.

Finally, one good advice was mentioned often: Get going! Do not spend a lot of time on discussing risks, just get into the thick of it. Remember that it is okay to start out with a low-level approach. There are plenty of possibilities, so just start with something and if it does not work, try something else. Like Edison said: "I have not failed. I just found 10.000 ways that do not work."



“ It has been a positive experience! I have gained a good overview of the market and I met a new manufacturer, who I actually did not know. ”

*Torben Nissen,  
Project Manager, NNE Pharmaplan*



# LATEST NEWS

## New departments in England and Spain

### CREADIS Spain

Since January, CREADIS has had an address in Spain. The first department is based in Barcelona and the next is scheduled to open in Pamplona. Spain is placed as the world's fifth largest producer of wind power energy, and it will also be wind power we will focus on initially. Spain is number two in Europe in the automotive industry, so this business area as well as the defense industry will also quickly become our business areas.

### CREADIS England

On February 1 CREADIS was established in England, with the name CREADIS UK Ltd. The two new departments have been opened in London and the northern coastal town Lowestoft respectively. Britain is the world's largest offshore wind power market with more than 5.000 offshore wind turbines in 2025, and one of our primary focus areas will initially be the wind power market, where we will draw on the knowledge and expertise we have within renewable energy. In connection with the opening in England, the DIS headquarter in Stilling received a visit from the British ambassador Dominic Schroeder, who welcomed the potential DIS/CREADIS see in the country.



DIS

CREADIS

## ASSET MANAGEMENT

### - NEW BUSINESS AREA IN DIS

**Based on DIS' long track record in product development and service engineering and DIS' advancement within Industry 4.0, we have now created a new business area where all the competences are united.**

DIS Asset Management offer complete solutions within ISO 55000-certification, AM-strategies, asset monitoring, spare parts solutions, and maintenance strategy and planning. Add to this, maintenance excellence services within master data, RDS-PP and configuration management, failure mode analysis and condition based maintenance, CMS system integration and life cycle cost analysis. Finally, education and training is offered as well as logistical solutions.

### The leading wind power industry

Asset Management solutions and services are offered to a wide range of market segments. However, it was the significant and growing need from the wind power industry that formed the basis for the creation of DIS' new business area.

- The need for optimization of operation and maintenance is growing significantly in the wind power industry, and many of the decisions made in the planning and design phase have a major impact on operating and maintenance costs, as well as lifetime extension and de-commissioning. Therefore, it makes sense to include knowledge and experience from the design and construction phase, and offer complete solutions, says Morten Basse, responsible for Asset Management in DIS.

Asset Management and operational optimization present international opportunities and fit well into the DIS Global Team business concept and globalization strategy.



Photo: Model photo

- In the wind power industry, we will be present in Denmark, Germany, Spain, USA, Taiwan and Britain. The new business area is also the driver behind the creation of CREADIS Ltd. in England, also because Britain is known as the world's largest offshore wind power market, says Morten Basse.



The requirements for rat traps in sewer systems are extensive as the environment in which the product is used is tough and difficult to access. The trap will be mounted in the sewer discharge pipe, allowing it to block the access of rats to certain parts of the sewage system while at the same time it will kill intruding rats.



*Hans Knudsen,  
Managing Director at Ratél*



*Photo: Ratél*

## RATTRAP

### – THE MECHANICAL RAT TRAP

**RatTrap is the name of a new mechanical poison-free rat trap to be placed in the sewer systems to get rid of the pesky rodents.**

The Danish company Ratél who manufacture products for poison-free rat control have developed a mechanical rat trap, which will reduce the number of rats in the sewer systems with new technology. In the development process and in close collaboration with Ratél, DIS has been responsible for the extensive construction work of the actual trap and the equipment used around the trap.

- The requirements for rat traps in sewer systems are extensive as the environment in which the product is used is tough and difficult to access. The trap will be mounted in the sewer discharge pipe, allowing it to block the access of rats to certain parts of the sewage system while at the same time it will kill intruding rats, explains Hans Knudsen, Managing Director at Ratél.

#### **From drawing board to finished product**

Based on Ratél's experience with a previous rat trap, DIS received drawings of the new adjustable trap and has been responsible for the development work in close collaboration with Ratél involving idea development, 3D design work, strength calculation of affected components, testing of partial solutions using rapid prototyping, and design for manufacturing in relation to plastic molding of the complex plastic components.

The trap is constructed as modules and just by changing the plate, it can be used in all conventionally seized pipes from ø150

to ø500 millimeters in diameter. The trap is wirelessly connected to the GSM network and reports the number of killings to a custom-made portal.

- The new RatTrap traps are already used by customers in Scandinavia, where several municipalities use the trap. The technology in the trap has given the municipalities the ability to comply with the legal rules for registering rat control in a clever and innovative way, says Hans Knudsen.

In the effort to fight the rat population there is a constant need for new variations of trap solutions, and Ratél and DIS will continue to work on this together.

#### **About Ratél**

Raté, based in Kolding, Denmark, is one of Europe's leading companies within the development of environmentally friendly and ethically correct solutions for poison-free rat control.



# NEW EMPLOYEES

Since December we have welcomed a number of new colleagues:



**Anastazja Sitarz**  
Office Manager,  
Krakow



**Anders Høxbro  
Larsen**  
Intern,  
Mechanics, Aarhus



**Arkadiusz Swiatek**  
Project Engineer,  
Mechanics, Krakow



**Benjamin Højgaard  
Nielsen**  
Intern,  
E&A, Aarhus



**Bo Madsen**  
Sales Manager,  
Kolding



**Charlotte Caspersen**  
Student Assistant,  
Sales, Esbjerg



**Chris Wilhelm  
Olesen**  
Intern,  
HW/SW, Aarhus



**Christian Løfquist**  
Technical Project  
Manager,  
HW/SW, Copenhagen



**Christian Wirefeldt  
Bundgaard Jensen**  
Senior Engineer,  
HW/SW, Aarhus



**Christoffer Høring**  
Marketing Coordinator,  
Aarhus



**Damian Drabik**  
Project Engineer,  
E&A, Krakow



**Finn Hedegaard  
Pedersen**  
Project Engineer,  
HW/SW, Aarhus



**Frederik Raaby**  
Global Key  
Account Manager,  
Aarhus



**Gitte Buur Hansen**  
Finance Assistant,  
Aarhus



**Hans Brunbjerg  
Lauridsen**  
Project Engineer,  
E&A, Aarhus



**Henning Laursen**  
Chief Engineer,  
HW/SW, Aarhus



**Jacek Sandomierski**  
Project Engineer,  
E&A, Krakow



**Jacob Maienborg  
Christiansen**  
Project Manager,  
Esbjerg



**Jakub Kielar**  
Project Engineer,  
E&A, Krakow



**Jan Nowak**  
Project Engineer,  
Mechanics, Krakow



**John Skovsgaard**  
Project Engineer,  
HW/SW, Aalborg



**Kristian Holbek**  
Intern,  
HR, Aarhus



**Mads Lyngsø Møller**  
Business Consultant,  
Aarhus



**Marcus Hoch**  
Constructor,  
E&A, Hamburg



**Matthi Kaae Keller**  
Project Engineer,  
Aarhus



**Michael Boris  
Petersen**  
Project Manager,  
Esbjerg



**Michal Polinski**  
Project Engineer,  
Mechanics, Krakow



**Morten Nøhr**  
Intern,  
E&A, Aarhus



**Niels Christian  
Lind-Frandsen**  
Senior Engineer,  
HW/SW, Aarhus



**Pascal Partsch**  
Project Engineer,  
HW/SW, Nürnberg



**Pawel Wojcik**  
Project Engineer,  
HW/SW, Krakow



**Rasmus Gregersen**  
Project Engineer,  
E&A, Aarhus



**Rasmus Jørgensen**  
Senior Engineer,  
Mechanics,  
Copenhagen



**Roman Mashkovskyy**  
Intern,  
HW/SW, Aarhus



**Simone Juel Olsen**  
Intern,  
Mechanics, Aarhus



**Steffen Vognstoft  
Kristensen**  
Student Assistant, Sales,  
Aarhus



**Tan Quoc Dang**  
Intern,  
Mechanics, Aarhus



**Thomas Amthip  
Mansachs**  
Senior Engineer,  
HW/SW, Aarhus



**Thomas Christensen**  
Project Engineer,  
Mechanics,  
Copenhagen



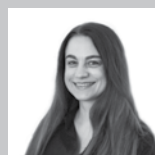
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**Trine Kjærskov**  
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**Valentina Vuckovic**  
Project Manager,  
Dortmund

Denmark | England | Germany | Poland | Spain | Ukraine | USA