ENGINEERING TOMORROW



PLUS+1 Ecosystem for embedded system innovation



Danfoss at a glance

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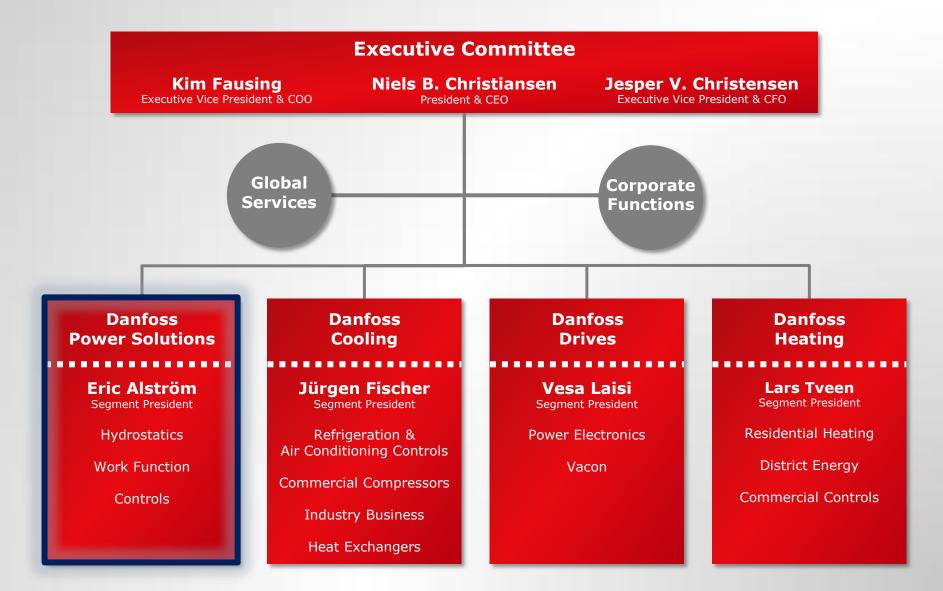


Employees worldwide





Business structure in the Danfoss Group



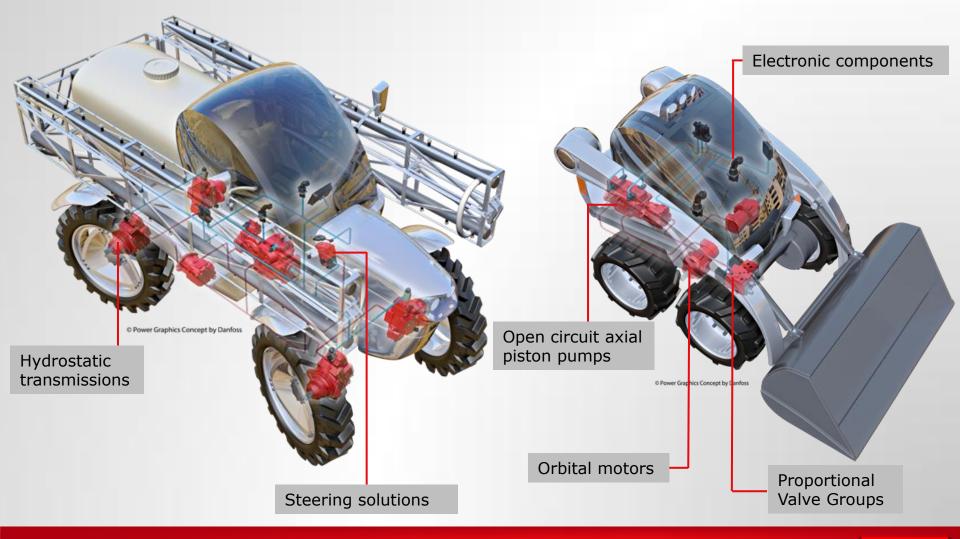


Danfoss Power Solutions facts

Sales - 2015	11,600m DKK / 1,720m USD
Employees	~7,000*
Worldwide sales	more than 80 countries
Sales companies	in 17 countries
Factories	20 in 10 countries
Top three markets	USA, Europe and China
1 Albert	The Contraction of the Contracti
	* Including temps



Solutions to help customers control and deliver power in their applications





Market segments Off-highway mobile market



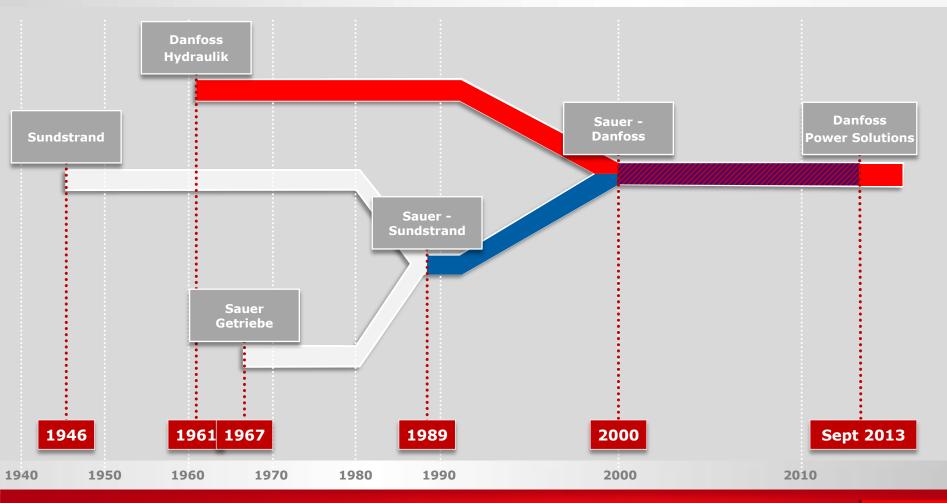
Road building

Turf care

Specialty



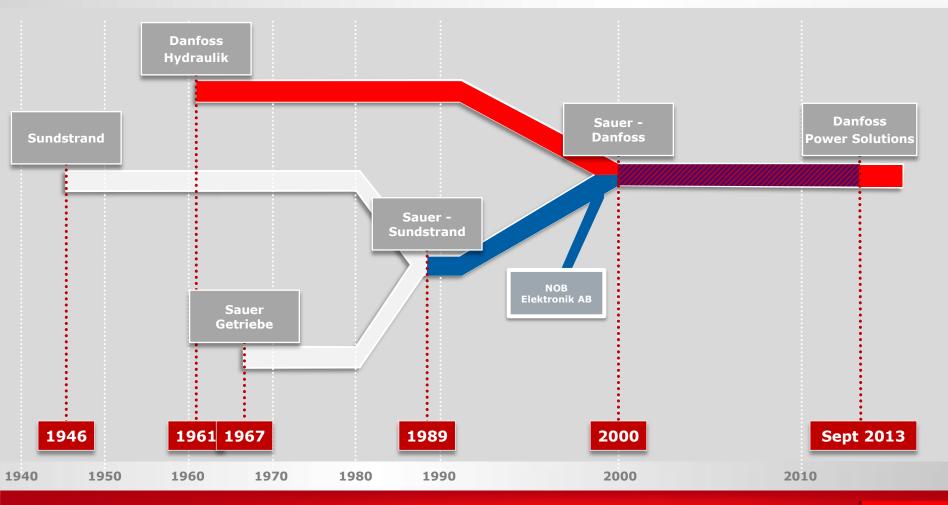
Our history in hydraulics Strong roots



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Our history in hydraulics Strong roots



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Danfoss Power Solutions AB

Älmhult



Software Solution Services Electronic Components Sales & Marketing ~25 people

History

1985 Founded as NOB Elektronik AB to produce electronics for electric heating products

2000 January, NOB acquired by Sauer-Sundstrand Solna



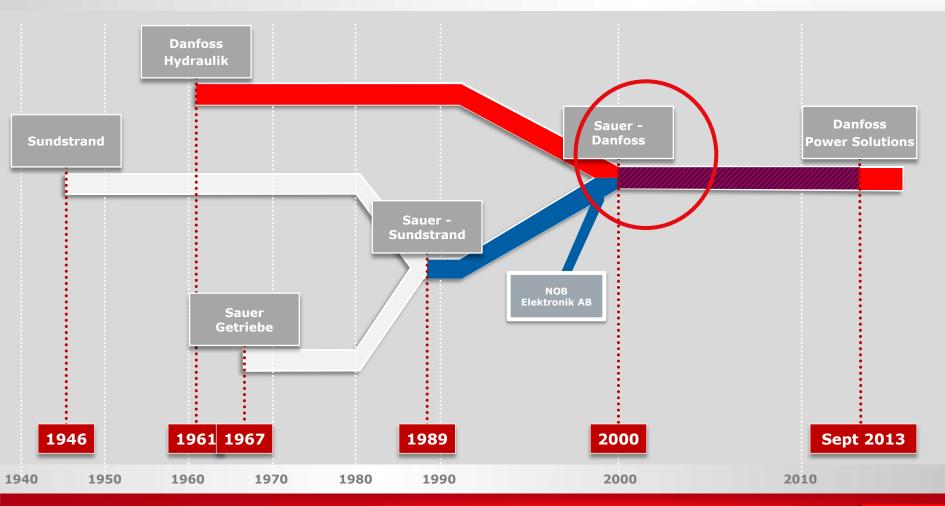
Sales & Marketing PVG Turolla

~10 people



Strong roots but

- a diverse product portfolio
- business at risk because we couldn't provide software solutions fast enough, and it had to be done all in-house.





PLUS E1®

A Solution to lack of speed in innovation

- The 11 September 2001 leadership decided to create a new Hardware and Software platform
- A global project was started with resources from Minneapolis, Neumunster and Älmhult.
- PLUS+1 was released at BAUMA Germany 1 April 2004.
- PLUS+1 provided a global and standardized product portfolio



Mobile electronic components and systems



 Powerful, proven solutions for reducing costs and bringing machines to market faster:

The PLUS+1[®] concept of PLUS+1 microcontrollers, the PLUS+1 GUIDE software platform of PLUS+1 application blocks, and an extensive portfolio of PLUS+1 compliant products

 In addition, we provide an array of electronic components – including software, joysticks, PLUS+1 microcontrollers, sensors, graphical terminals and GPS technology



PLUS+1 Platform Architecture "PLUS+1 Toolbox"

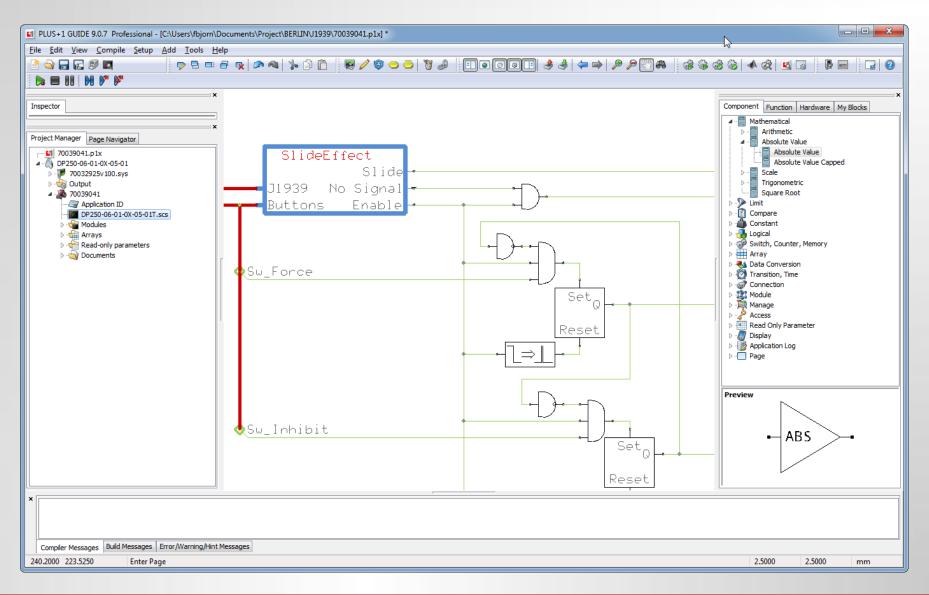
PLUS+1 Hardware

Software PLUS+1 Service Tool Parameter file Application **Parameters Application Interface Layer** HEX/LHX File CSV File KERNEL OS HWD PLUS+1 GUIDE Parameter Com. generator Protocol HW data sheet C Compiler Drivers Stack Code generators **API** specification Bootloader **GUIDE Editor** C – libraries (CCP) **API libaries** 10000 Hardware kernel libraries Peg (0)40 **Function Block** CPU Memory Libraries make/build script SCALE **Ų**16 U№. User 10 **Compliance Block** documentation Libraries

PLUS+1 Tools



PLUS+1 GUIDE SW Development tool



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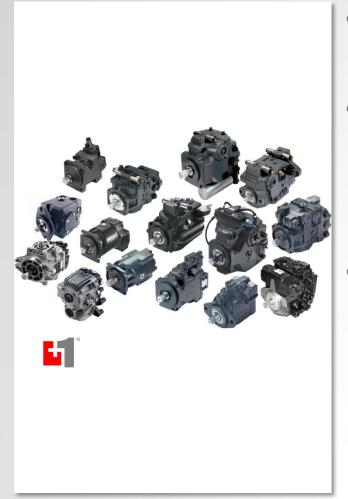
PLUS+1 GUIDE Service tool

K PLUS+1 Service Tool 8.1.2 Professional - [C:\GUIDEprj\UserConfProj\UserConfProj.P1D]

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Hydrostatics



- Proven performance exceptional efficiency
- Solutions for low-, medium- and highpower applications
 - single and dual-path propulsion drives
 - closed-loop auxiliary transmissions
- Best-in-class axial piston variable displacement pumps
 - SIL 2 certified automotive control (H1 AC)
 - numerous innovative solutions that address exactly the challenges and needs of our customers' machines



PVG proportional valves



- Efficient performance precise operation
- Reliable and modular in concept, our valve solutions are highly flexible and can be designed to meet practically any application need
- Load sensing, electrically controlled, and load independent proportional valves
- Providing smooth machine control day after day, customers can count on them to perform the toughest task with maximum control

Steering components and systems



- Precise and comfortable control
- Reliable and safe solutions
- Product range:
 - Standard and electrohydraulic steering units
 - Mini steering units
 - Priority valves
 - Dedicated steering sensor
 - Flow amplifiers
- State-of-the-art steering systems that interface with the leading GPS suppliers in the market



Orbital motors



- Efficient power delivery over the entire life cycle
- The broadest orbital motor range on the market – and the safest bet for quality, durability, efficiency and reliability
- Our three series are tailored for mediumto heavy-duty tasks:
 - T-series the highest torque
 - O-series the flexible choice
 - V-series the core solution
- High precision and controllability with our PLUS+1[®] Compliant EMD speed sensor



Bringing machines to market faster



- Complete steering, propel, work, and control function systems
- Speeding up system development to bring vehicles to market faster
- PLUS+1[®] platform:
 - allows customers to rapidly develop and customize electronic machine control
 - with a growing portfolio of PLUS+1 compliant products, PLUS+1 means customers simply Plug and Perform[®]



Typical customers and applications





















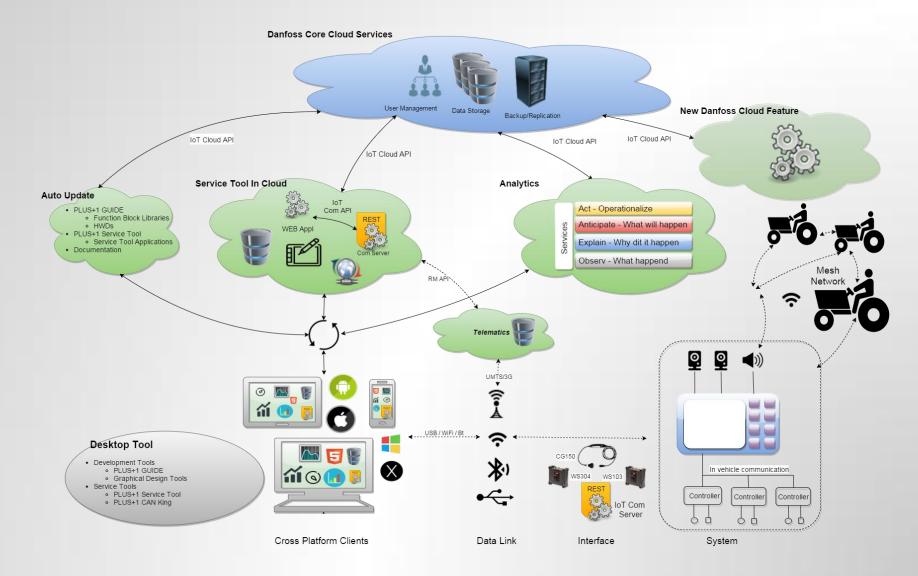








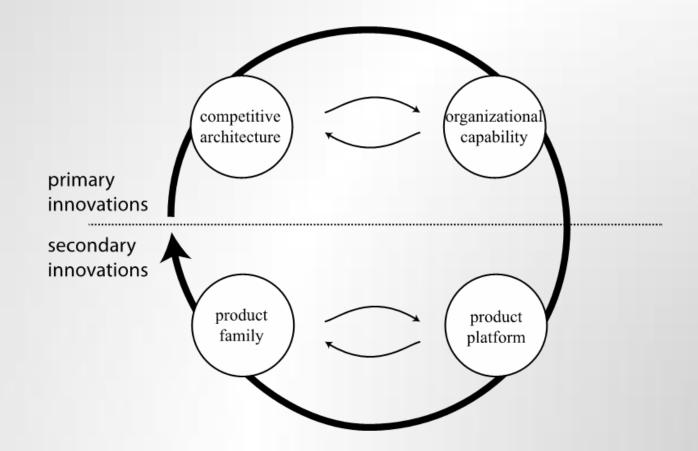
Danfoss Cloud Services





Next step

• PLUS+1 as a platform for Functions and Services









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