

# AKKA

PASSION FOR  
TECHNOLOGIES

## APPLICATION WITH NX OPEN

### INTEGRATED AND UNCOMPLICATED

With NX OPEN, the NX CAD system offers an extensive collection of tools (programming interfaces/APIs) on the basis of which processes can be automated and additional functions integrated in NX. We have developed various solutions on the basis of NX OPEN or have migrated solutions from CATIA V5 to NX.

#### THE FOLLOWING SOLUTIONS WERE DEVELOPED ON BEHALF OF THE CUSTOMER AS PART OF THE PLM 2015 PROJECT:

- Advice on the use of neutral data formats
- Creation of the involute gearing to DIN 3960
- Calculation of the secondary image separation of a windscreen in order to assess the optical quality
- Creation of chain drives with 3D representation of different chains and tensioners
- Derivation and migration of 3D tubes as .sol file, bending tables and the complete drawing views, starting from native solid data or JT data
- Representation of weld seams on drawings, also in the side elevation
- Derivation of NC tables for flat contours in 3D
- Definition and management of connecting elements using DXWeld
- Tolerance management for 3D surface data

These examples show how specific work routines can be automated and integrated into NX. Our experts will be happy to advise you on the automated implementation of your routines in NX.

### OUR BENEFITS

- A team of experienced specialists in R&D
- We understand the needs of large OEMs and their suppliers
- Extensive experience in the migration of applications from CATIA V5 to NX



Automotive



Aerospace



Railway



Energy



Life Sciences



Telecoms



Space



Services and  
Informations Systems



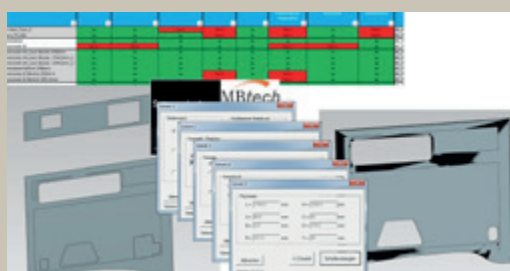
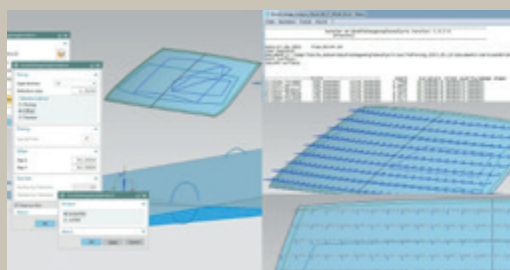
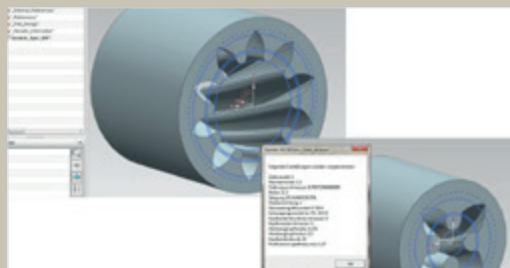
Defence



Oil and Gas



Consulting



## REFERENCE EXAMPLES

### **NX-POWERCOPY “INVOLUTE GEARING”**

The NX-Powercopy “involute gearing” was created by taking over the methods of a CATIA V5 template for NX. In this case a subtraction solid is created, not the gear wheel with involute gearing directly. This is then used to create the gear wheel by means of a Boolean operation. The parameters of the involute gears are also stored in “DB\_Zahn” files on the customer’s premises that can be processed directly using this template.

### **“CHAIN DRIVE” APPLICATION**

The “chain drive” application reads in a neutral data set of the coordinates of the individual chain links previously calculated. The different types of chain link were provided by us as NX UDF templates. The result of this application is a complete description of the chain with all the links as an NX part file.

### **“SECONDARY IMAGE SEPARATION” APPLICATION**

The NX application “secondary image separation” simulates the light beam passage through a windscreen, allowing for its geometry and optical properties. Starting from the outer surface, a 3D model of the windscreen is created, allowing for the “wedge values”. The different fields of vision can be selected by the user as curves. The calculation can be performed at selection points or can be controlled using parameters. The result is output either by PMI in the 3D data set and/or as an ASCII file in a format defined by the customer.

### **“NX TUBING TOOLKIT” TOOL**

The “NX Tubing Toolkit” allows tubes from different data sources to be processed automatically and to either automatically generate the NX tubing line or to provide a complete drawing extraction with all the information for the NC bending machine. For the “Tubing” NC process, a dedicated file format (.sol) was defined for the customer whose output is supported by NX Tubing. On the other hand, these NC files can also be used to generate the 3D data set directly.

### **SIDE WINDOW CONFIGURATOR**

The side window configurator is an application that MBtech has created for one of its customers. All possible configurations of side windows for buses are provided in an Excel spreadsheet. In just a few steps the user can create the side window with all the parameters as a 3D data set. MBtech had already developed this application for CATIA V5. It was expanded for NX and adapted to the currently-used side window types.