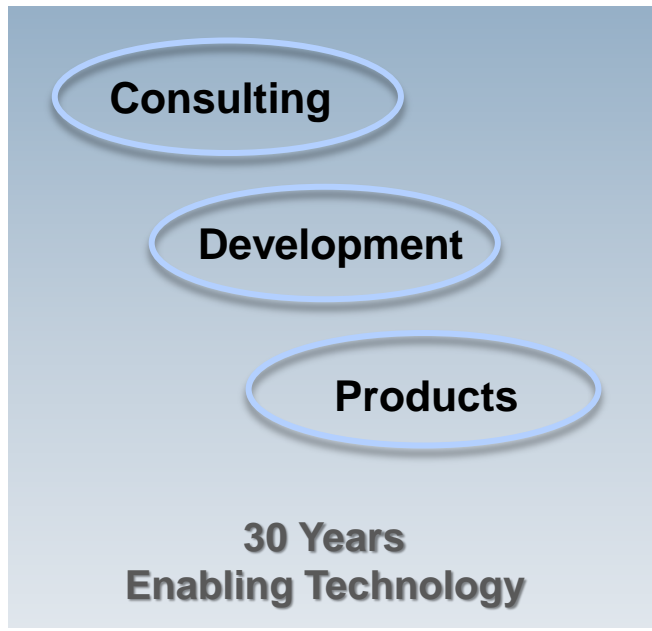




▶ Industrial Communication Technology

# TMG Technologie und Engineering

We make technology  
work for you.



Accredited as  
PROFIBUS & PROFINET  
Competence Center

Accredited as  
IO-Link  
Competence & Test Center



functional safety



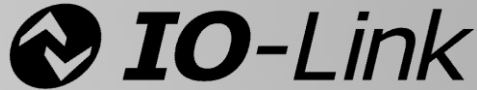
device engineering, IoT and edge gateways

- ★ Device Engineering Tools
- ★ Communication Drivers
- ★ WEB Services
- ★ Cloud Services
- ★ IT Integration





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Accredited as Competence & Test Center  
by IO-Link Community



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## ► Consulting

- Trainings & Workshops
- Platform Concepts
- Choice of Technology

## ► Certification and Test Support

- Expertise
- Interoperability Tests
- Operate demo systems
- Certification support
- **IO-Link Test Center**  
(Master and Devices)

## ► Engagement in PI and IO-Link Community

- Collaboration in many technical and marketing working groups
- Member of IO-Link steering committee
- Collaboration in user and development workshops of IO-Link and PROFINET



- ▶ Compatibility to PROFINET
  - PROFINET Version V24MU1\_Mar20, test bundle 20200520
- ▶ Functionality
  - Conformance Class A, B, C (IRT with Sitara/AMIC from Texas Instruments)
  - Features: Fast Start Up, Shared Device, Device Access, MRP (Medium Redundancy)
  - System Redundancy S2, Dynamic Reconfiguration and multi Instances for PA Profile 4.0
  - Prepared for Profiles/API like PROFI-safe, PROFInergy and IO-Link Integration
  - Used in first applications with APL (Advanced Physical Layer)
- ▶ Portable to many platforms
  - RTOS like FreeRTOS, embos, TI RTOS, sciopta or Linux with preemptive RT patch
  - Multiprotocol platforms like TI Sitara/AMIC or Renesas RZ/N
  - Single Chip Microcontroller STM32 M3, M4, H7 / Rx6xx / PIC32
    - With and without external switches e.g. microchip KSZ8863
- ▶ Small Footprint (Code ~ 300 Kbyte, RAM > 250 Kbyte RAM)

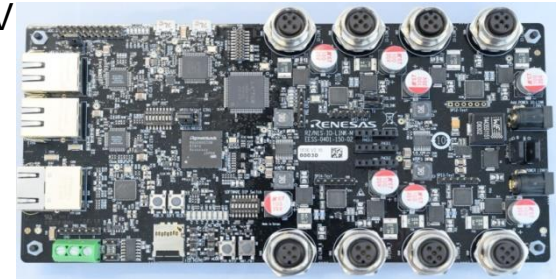
## ► Texas Instruments – Sitara AM 437

- 8 Channel IO-Link Master with TI device Phy IOL111
- PROFINET, EtherNet/IP and EtherCat
- PROFINET IO-Link Integration according to Ed2\_2832\_dV11\_Oct19
- TMG Interface Protocol SMI-TCP
- IO-Link Device Tool V5.1 – Professional Edition



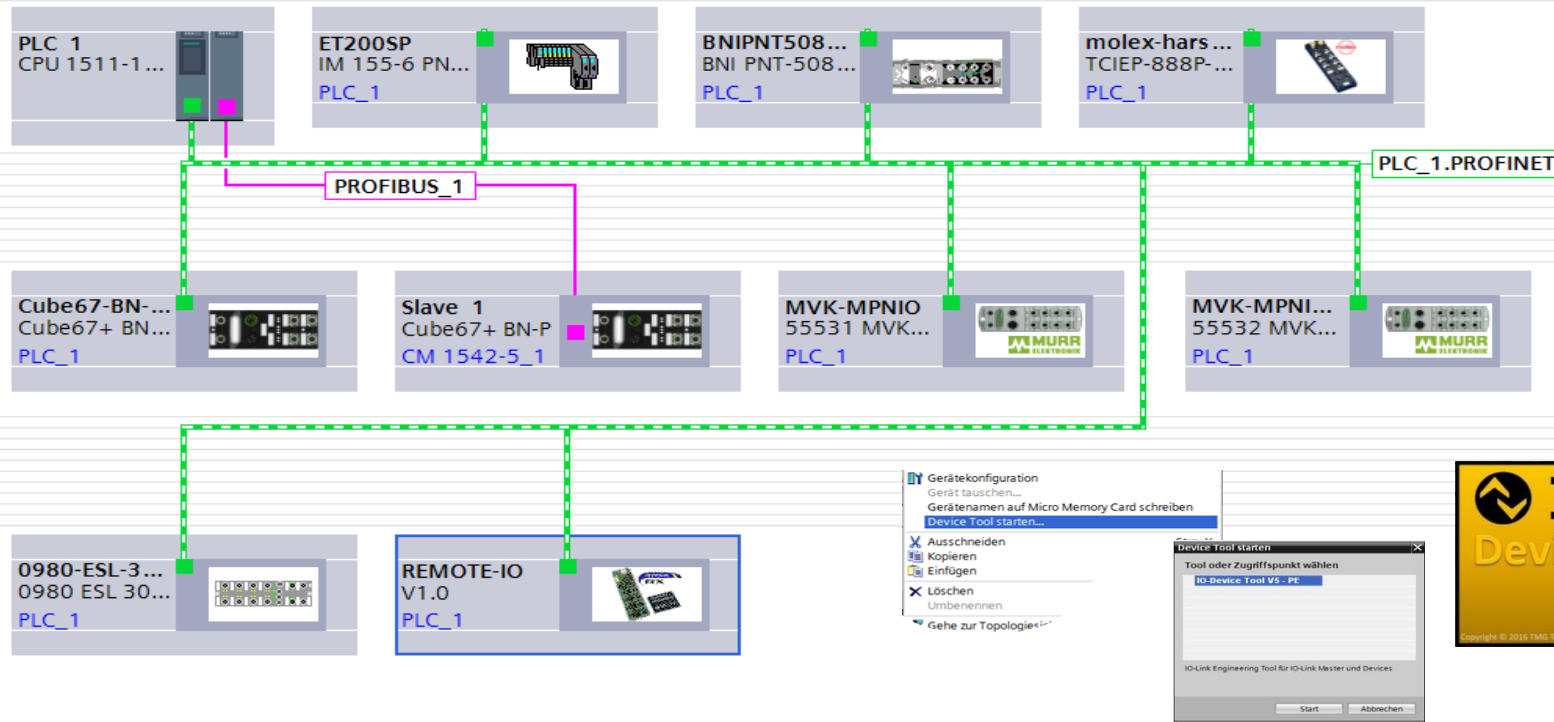
## ► Renesas RZ/N 1S, 1D

- 8 Channel IO-Link Master with Dialog or Maxim Master Transceiver
- PROFINET, EtherNet/IP and EtherCat
- PROFINET IO-Link Integration according to Ed2\_2832\_dV
- TMG Interface Protocol SMI-TCP
- IO-Link Device Tool V5.1 – Professional Edition





# IO-Link Device Tool – TCI : Call from PROFINET/PROFIBUS Configuration



- ▶ PROFINET & PROFIBUS Hardware Configuration with IO-Link masters of multiple vendors
- ▶ Supported from IO-Link Device Tool V5.1 – use right mouse click „Start Device Tool“
- ▶ Also prepared for IO-Link Safety





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Industrial communication  
without borders