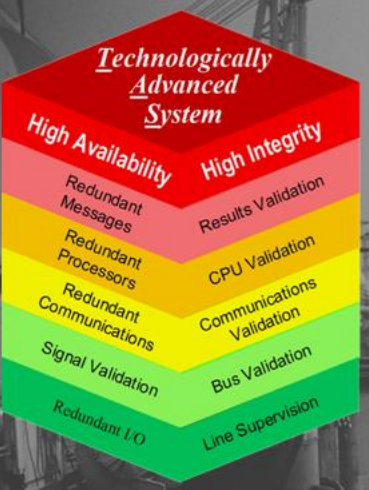


48 Years of Technical Excellence

IEC61508-2010
(SIL 1-3)
IEC61131-6

EDSA-300
Level 2

RTP3000-TAS

➢ Costs Less

Hardware: QMR <$20,000
Software: One-time registration fee
- No annual maintenance fees
- No HW/SW keys
- Unlimited number of tags
- Unlimited use of each application

➢ "Never Stops"

MTTF: >50,000 years
MTTFS: >60,000 years
MTTFD: >350,000 years

➢ Runs Faster

12 msec screw to screw
Redundant Archiving, 100K tags/sec
1 msec SOE (Digital and Analog)
10 msec HMI update rate

RTP3000 TAS Architecture

Seamless Integration
One Company/One Product
Multiple Solutions
(SIS,DCS,PLC)

EDSA-300
Level 2

IEC61508-2010
SIL 1-3
IEC61131-6

Node Processor: Intel® Atom™
- Solve logic N times per scan
- Engineering unit conversion
- Input validation and voting
- Encrypt host communications
- Communications validation
- Peer to peer communications
- Alarm and HMI communications
- Data Archiving communications

Chassis Processor: RISCore 32300
- Chassis I/O scanning
- 1 Msec Digital / Analog SOE
- 1 Msec Alarm
- Results validation and voting
- Bus validation
- I/O integrity checks
- Field device checking
- Field wire checking

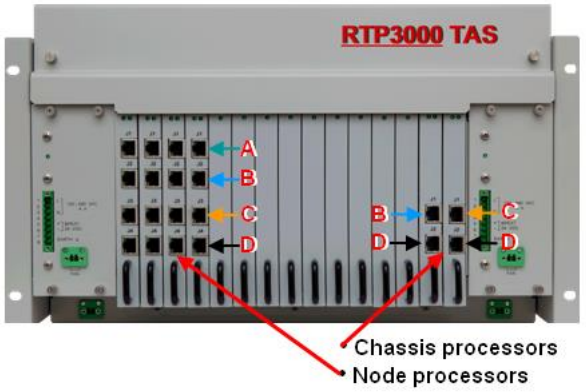
NetArrays (Configurator)

PTDBM (Tag DB)

RTPADA (Alarms/ Data Archive)

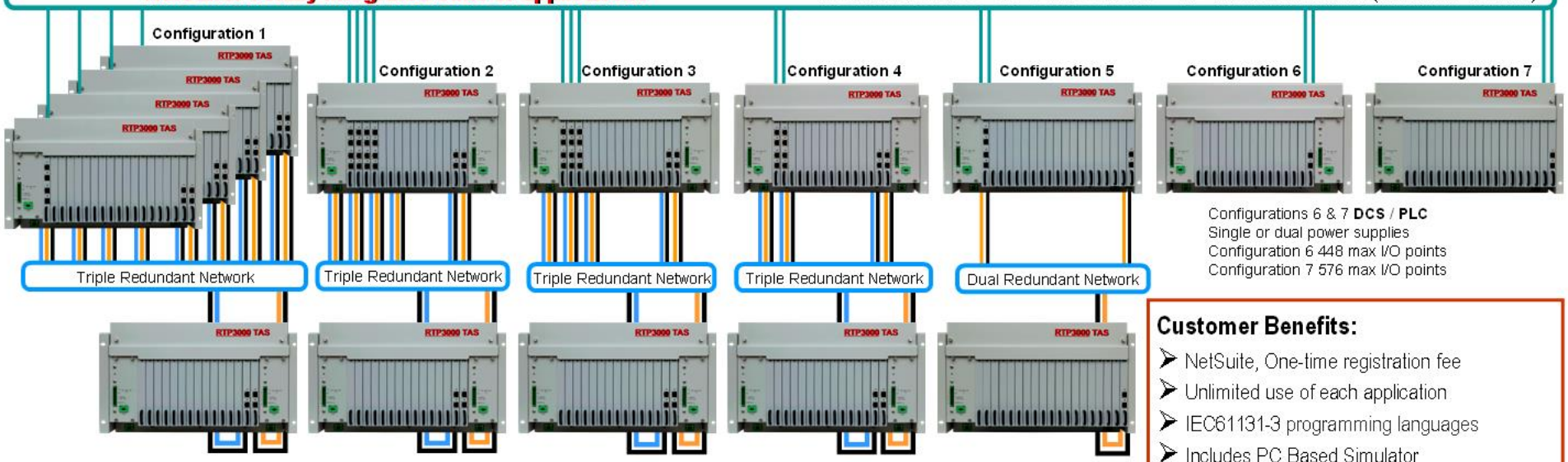
RTPView (HMI)

RTPOPC



NetSuite: Totally integrated suite of applications

Redundant Host & Peer Network SIL-3 communications (Host and I/O Networks)



Configurations 6 & 7 **DCS** / **PLC**
Single or dual power supplies
Configuration 6 448 max I/O points
Configuration 7 576 max I/O points

Configuration 1 **SIS SIL-3**
Distributed Quad Node Processors
Up to 16 I/O chassis, 6, 15, and 19
Single or dual chassis processors
Single or dual power supplies
9088 max I/O points per node

Configuration 2 **SIS SIL-3**
Centralized Quad Node Processors
Up to 16 I/O chassis, 6, 15, and 19
Single or dual chassis processors
Single or dual power supplies
9088 max I/O points per node

Configuration 3 **SIS SIL-3**
Centralized TMR Node Processors
Up to 16 I/O chassis, 6, 15, and 19
Single or dual chassis processors
Single or dual power supplies
9120 max I/O points per node

Configuration 4A **SIS SIL-3**
Configuration 4B **DCS**
Centralized Dual Node Processors
Up to 16 I/O chassis, 6, 15, and 19
Single or dual chassis processors
Single or dual power supplies
9152 max I/O points per node

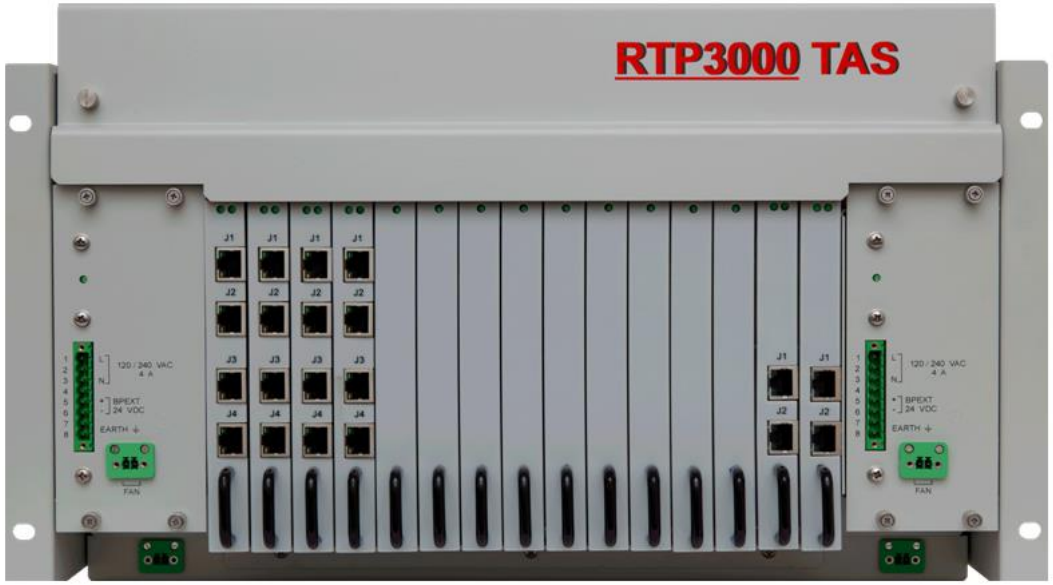
Configuration 5A **SIS SIL-2**
Configuration 5B **DCS**
Single Node Processor
Up to 16 I/O chassis, 6, 15, and 19
Single or dual chassis processors
Single or dual power supplies
9184 max I/O points

I/O Network - **B**
I/O Network - **C**
I/O Network - **D**

Customer Benefits:

- NetSuite, One-time registration fee
- Unlimited use of each application
- IEC61131-3 programming languages
- Includes PC Based Simulator
- Archive 100K tags/sec redundantly
- SIS, DCS and PLC use the same Hardware
- All systems support Hart, Modbus and OPC
- Ten Year Warranty on Hardware

Increased Performance



Node Processors

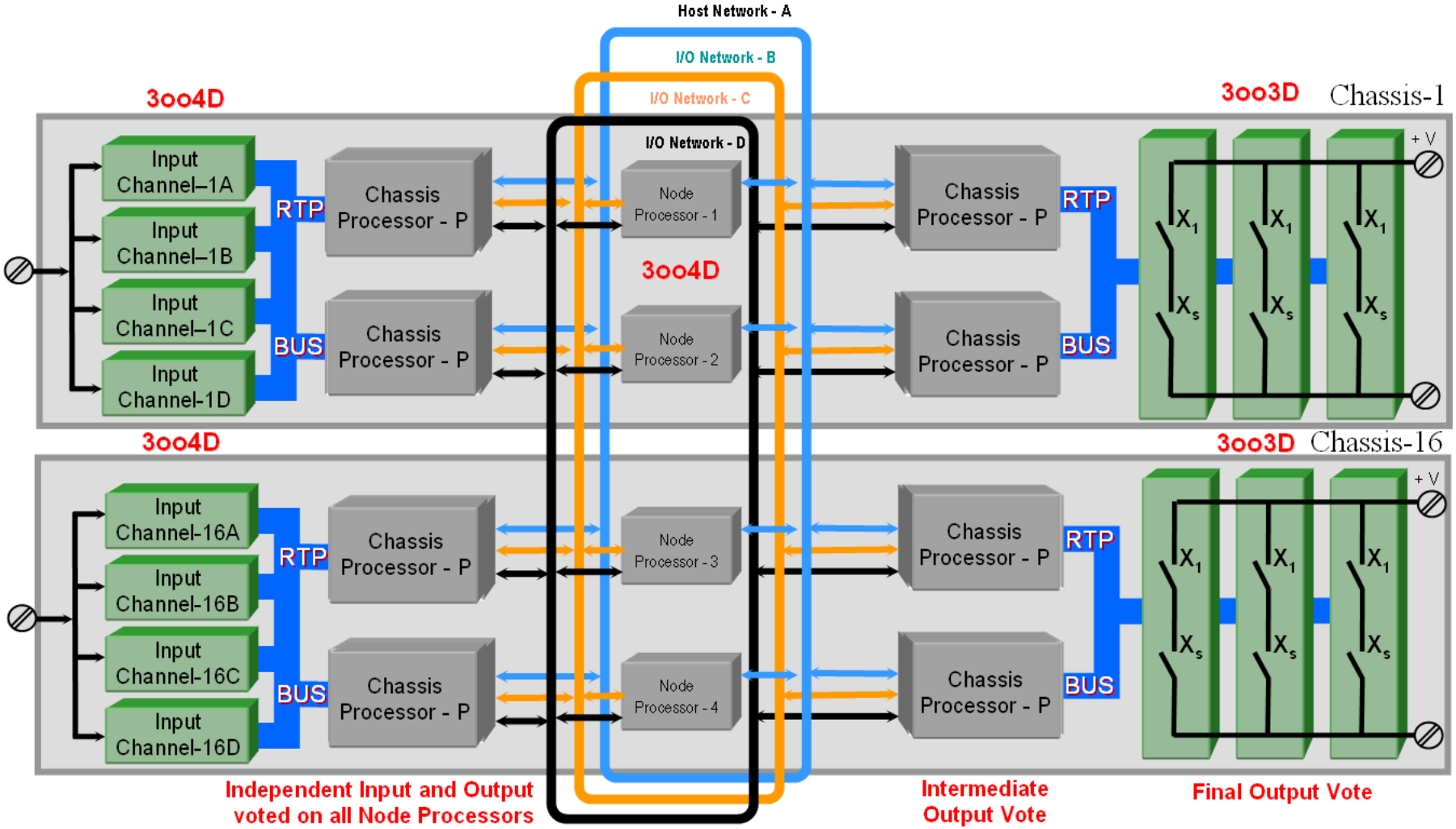
- Logic solving (N-Times)
- Engineering unit conversion
- Input validation and voting
- Alarm communications
- Data Archiving communications
- HMI and other communications
- Peer to peer communications
- Communications validation

- **Node processors: Mobile Intel® Atom™** Processor with integrated Intel Floating Point Unit
- **Chassis processors: RISCore 32300** implements enhanced MIPS-II instruction set architecture

Chassis Processor

- Chassis I/O scanning
- 1 msec Digital SOE
- 1 msec Analog SOE
- Results validation and voting
- Bus validation
- I/O integrity checks
- Field device checking
- Field wire checking

12 msec response time (screw to screw)

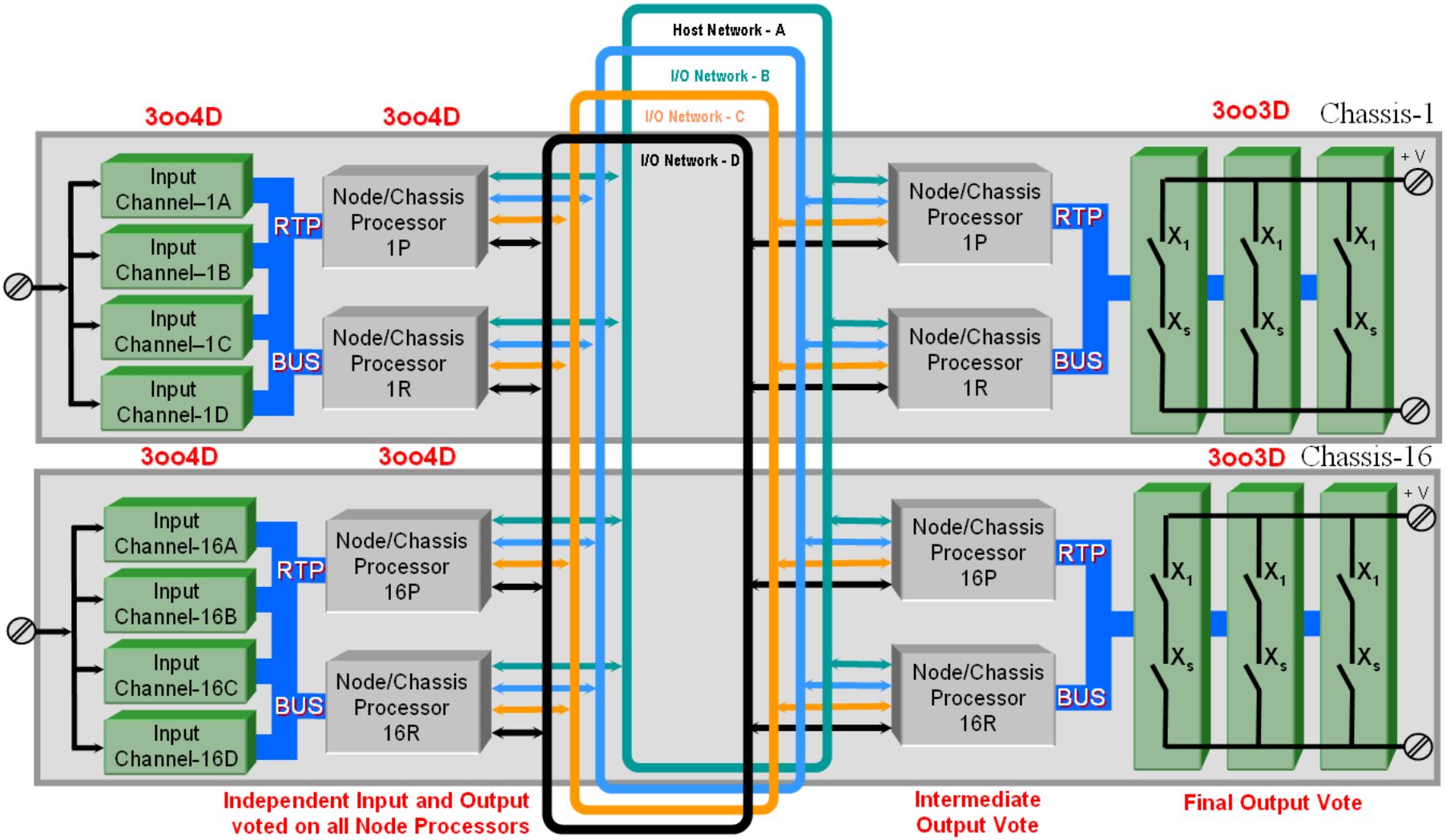


- MTTFS: > 60,000 Years
- MTTFD: > 350,000 Years
- MTTF : > 50,000 Years
- Availability: > 99.9999%

- Guaranteed
  - First Fault - Fault Tolerant
  - Multiple Faults - Fail Safe
  - Unlimited Online Downloads

- CPU's Physically Separated
- Comprehensive Diagnostics
- Proof Test: Not required for SIL-3
- Fastest Reaction Time (12 Msec)

Parallel Processing + Advanced Technology = Superior Performance



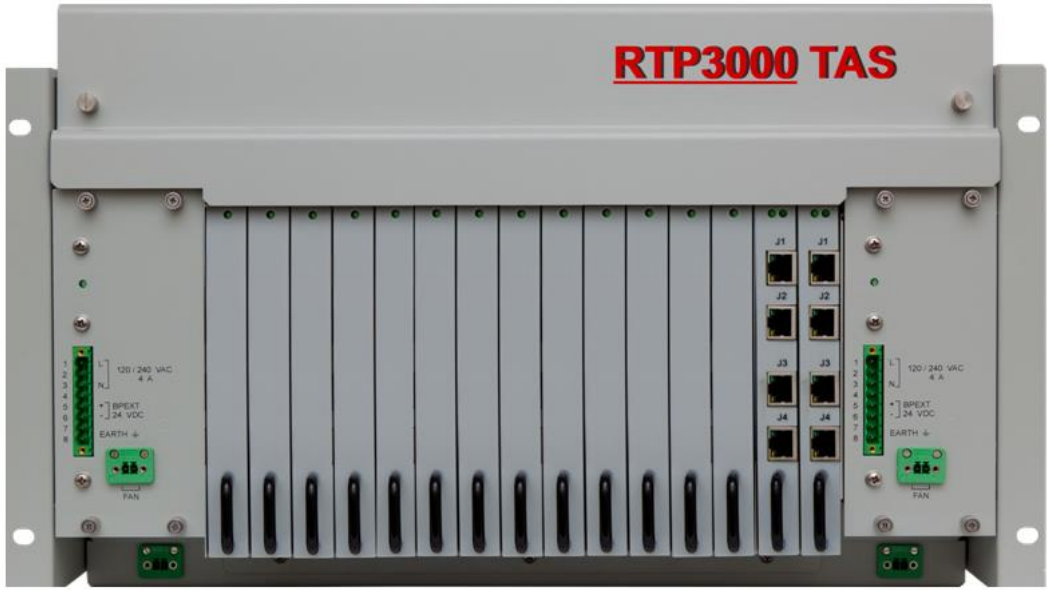
- MTTFS: > 60,000 Years
- MTTFD: > 350,000 Years
- MTTF : > 50,000 Years
- Availability: > 99.9999%

- Guaranteed
  - First Fault - Fault Tolerant
  - Multiple Faults - Fail Safe
  - Unlimited Online Downloads

- CPU's Physically Separated
- Comprehensive Diagnostics
- Proof Test: Not required for SIL-3
- Fastest Reaction Time (2.1 Msec)

Parallel Processing + Advanced Technology = Superior Performance

Increased Performance



Node Processors

- Logic solving (N-Times)
- Engineering unit conversion
- Input validation and voting
- Alarm communications
- Data Archiving communications
- HMI and other communications
- Peer to peer communications
- Communications validation

- **Node/Chassis processors: Mobile Intel® Atom™** Processor with integrated Intel Floating Point Unit

Chassis Processor

- Chassis I/O scanning
- 1 msec Digital SOE
- 1 msec Analog SOE
- Results validation and voting
- Bus validation
- I/O integrity checks
- Field device checking
- Field wire checking

2.1 msec response time (screw to screw)

RTP3000 TAS N+ Architecture

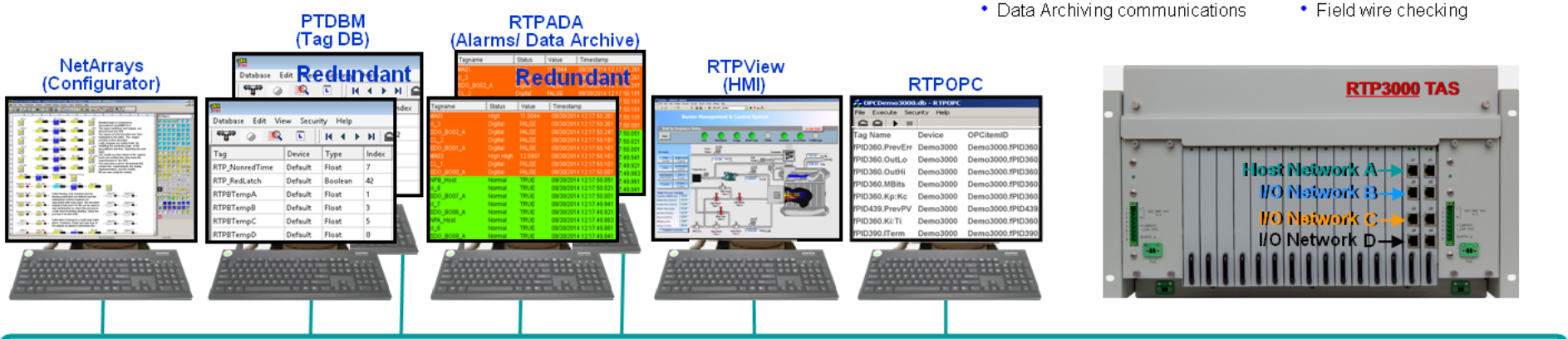
Seamless Integration
One Company/One Product
Multiple Solutions
(SIS,DCS,PLC)

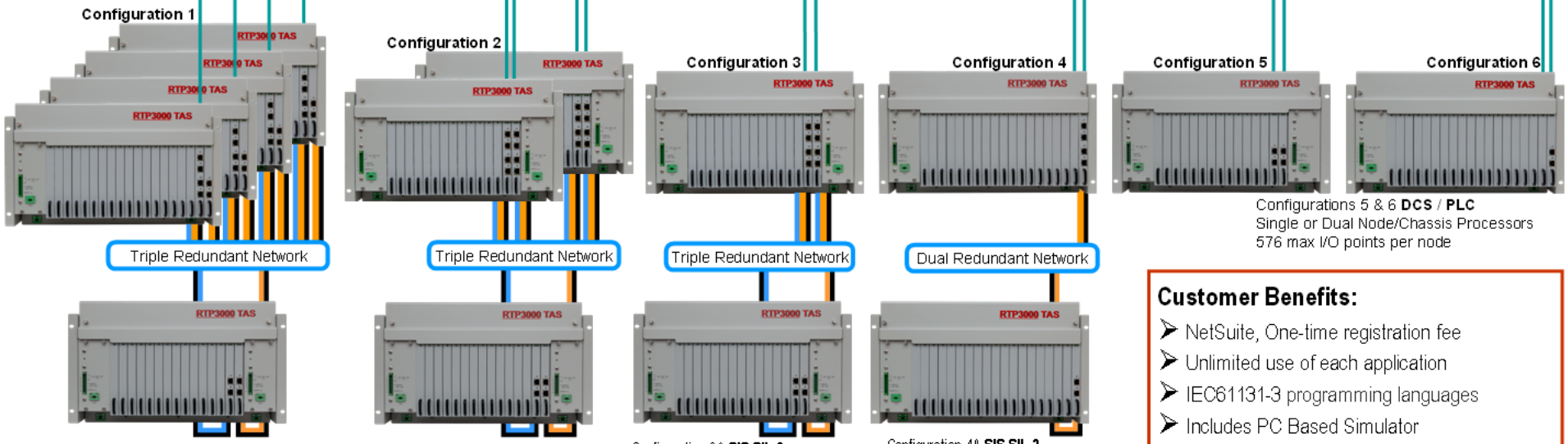
IEC61508-2010
SIL 1-3
IEC61131-6

EDSA-300
Level 2

Node/Chassis Processor: Intel® Atom™

- 1 Msec Scan rate
- Engineering unit conversion
- Input validation and voting
- Encrypt host communications
- Communications validation
- Peer to peer communications
- Alarm and HMI communications
- Data Archiving communications
- Chassis I/O scanning
- 1 Msec Digital / Analog SOE
- 1 Msec Alarm
- Results validation and voting
- Bus validation
- I/O integrity checks
- Field device checking
- Field wire checking





Configurations 5 & 6 **DCS** / **PLC**
Single or Dual Node/Chassis Processors
576 max I/O points per node

Configuration 1 **SIS SIL-3**
Distributed Quad Node/Chassis Processors
Up to 16 I/O chassis 6,11,15,19
Single or dual power supplies
9216 max I/O points per node

Configuration 2 **SIS SIL-3**
Centralized Quad Node/Chassis Processors
Up to 16 I/O chassis 6,11,15,19
Single or dual power supplies
9216 max I/O points per node

Configuration 3A **SIS SIL-3**
Configuration 3B **DCS**
Dual Node/Chassis Processors
Up to 16 I/O chassis, 6,11,5,19
Single or dual power supplies
9216 max I/O points per node

Configuration 4A **SIS SIL-2**
Configuration 4B **DCS**
Single Node/Chassis Processor
Up to 16 I/O chassis, 6,11,15,19
Single or dual power supplies
9216 max I/O points per node

I/O Network - **B**
I/O Network - **C**
I/O Network - **D**

Customer Benefits:

- NetSuite, One-time registration fee
- Unlimited use of each application
- IEC61131-3 programming languages
- Includes PC Based Simulator
- Archive 100K tags/sec redundantly
- SIS, DCS and PLC use the same Hardware
- All systems support Hart, Modbus and OPC
- Ten Year Warranty on Hardware

RTP3000 TAS N+ Architecture

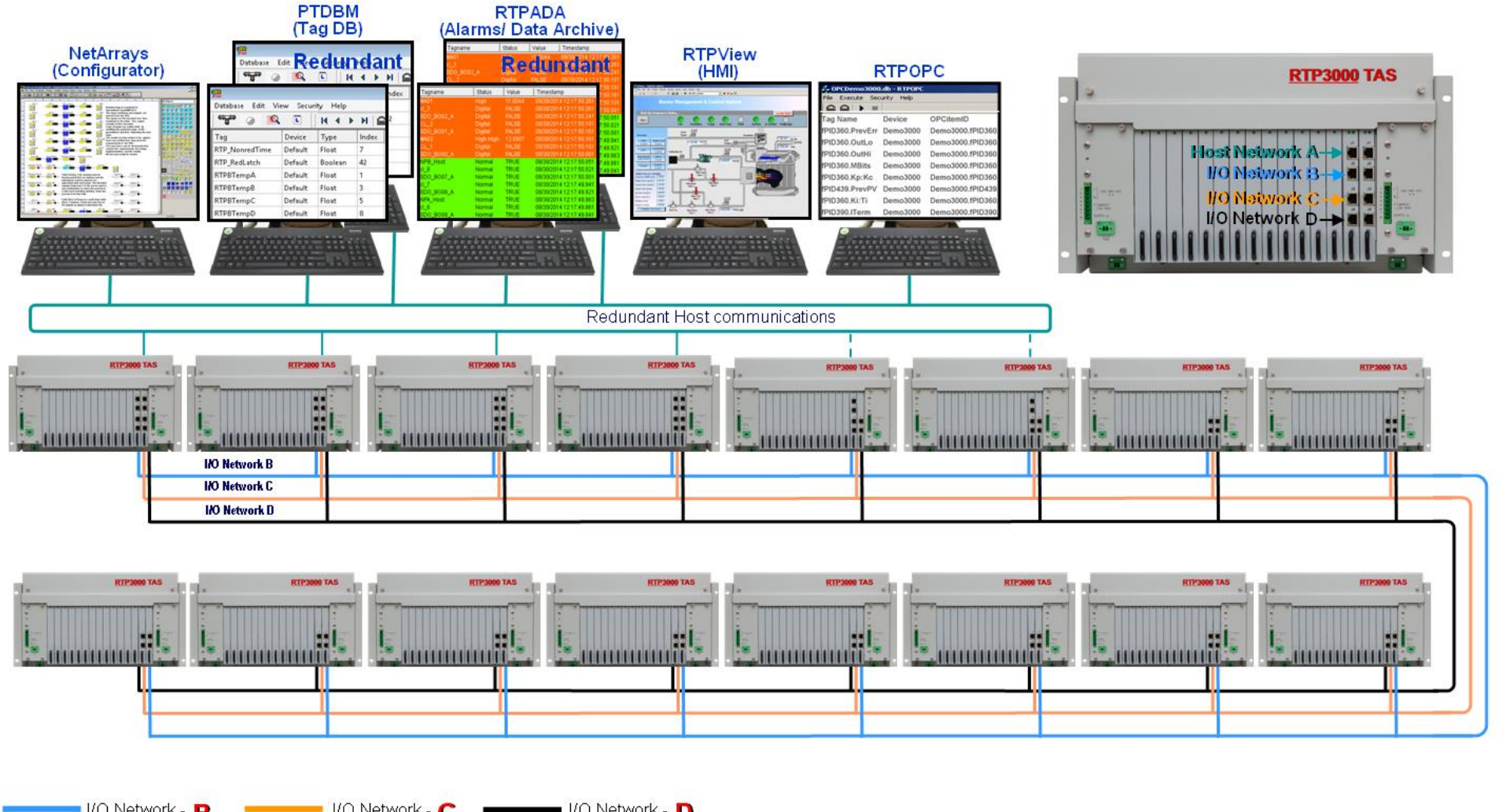
Seamless Integration
One Company/One Product
Multiple Solutions
(SIS,DCS,PLC)

IEC61508-2010
SIL 1-3
IEC61131-6

EDSA-300
Level 2

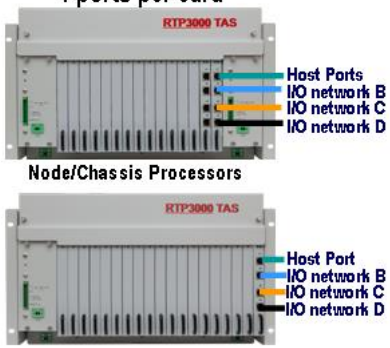
Node/Chassis Processor: Intel® Atom™

- Solve Logic N times per scan
- Engineering unit conversion
- Input validation and voting
- Encrypt host communications
- Communications validation
- Peer to peer communications
- Alarm and HMI communications
- Data Archiving communications
- Chassis I/O scanning
- 1 Msec Digital / Analog SOE
- 1 Msec Alarm
- Results validation and voting
- Bus validation
- I/O integrity checks
- Field device checking
- Field wire checking

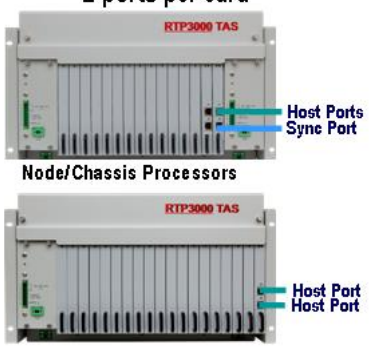


RTP3000 TAS N+ Architecture

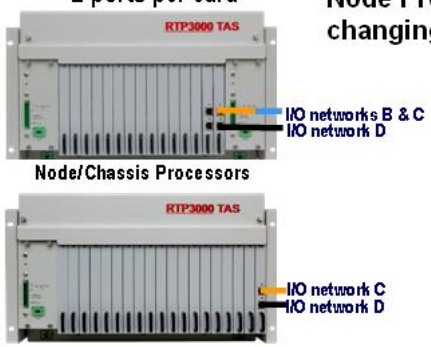
Multi-Chassis Node Processor
4-ports per card



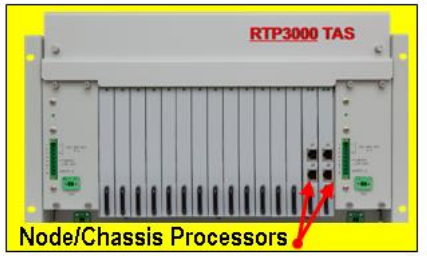
Single-Chassis Node Processor
2-ports per card

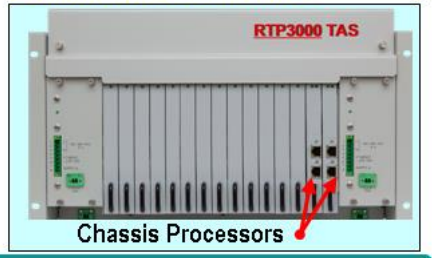


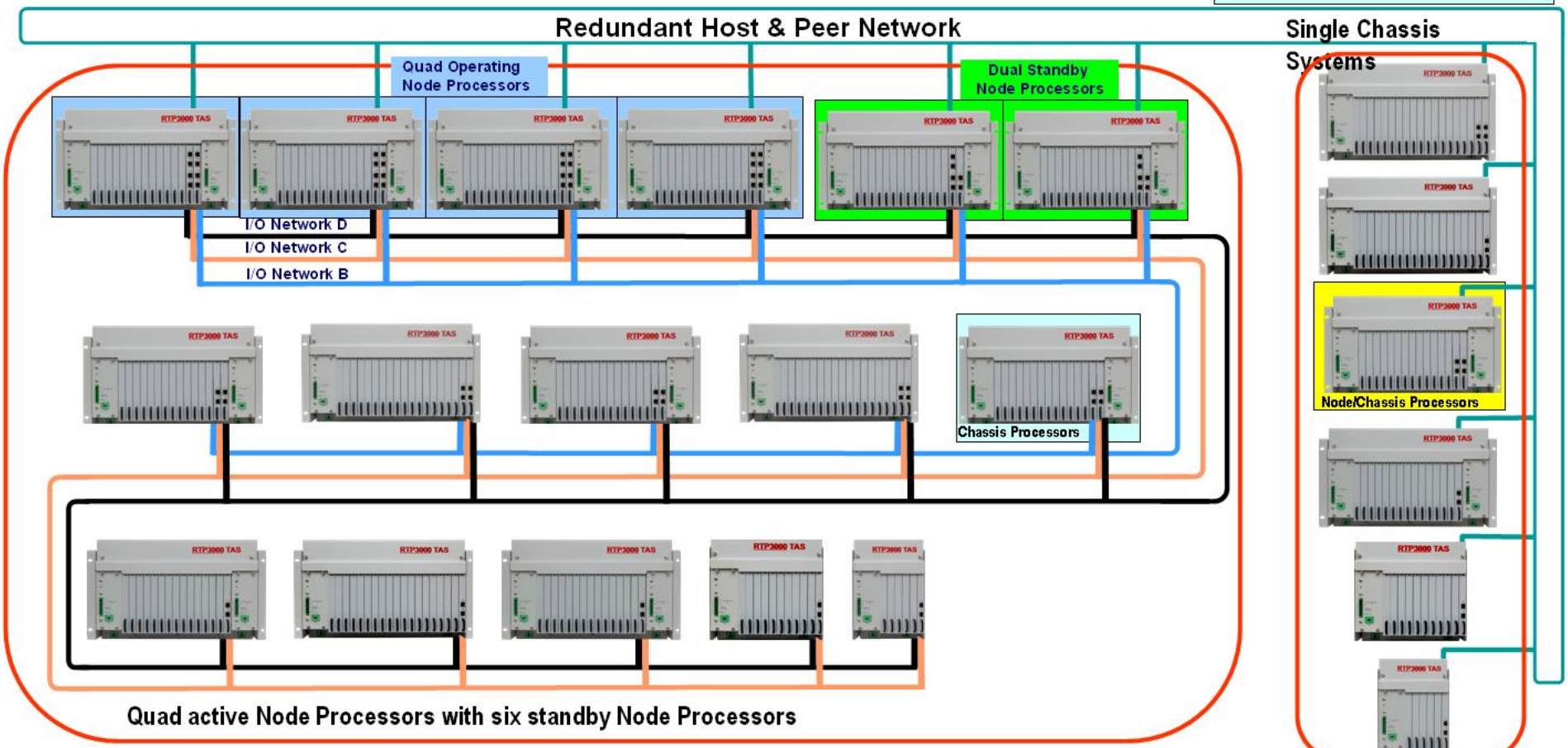
Remote Chassis Processor
2-ports per card



Convert from Node to Chassis or Chassis to Node Processor by changing the OS







Results

- **Costs Less:**

  NetSuite:

  Full License $10,000
  Limited Version $2,500
  Plant already licensed $0

  Dual Redundant chassis:

  Dual Node/Chassis Processors, Dual Power Supplies, Fan Assembly <$8,000

  I/O Pricing:

  32-point DI card $13 per point
  32-channel AI card $23 per channel
  32-point DO card $18 per point

- **Runs Faster:**

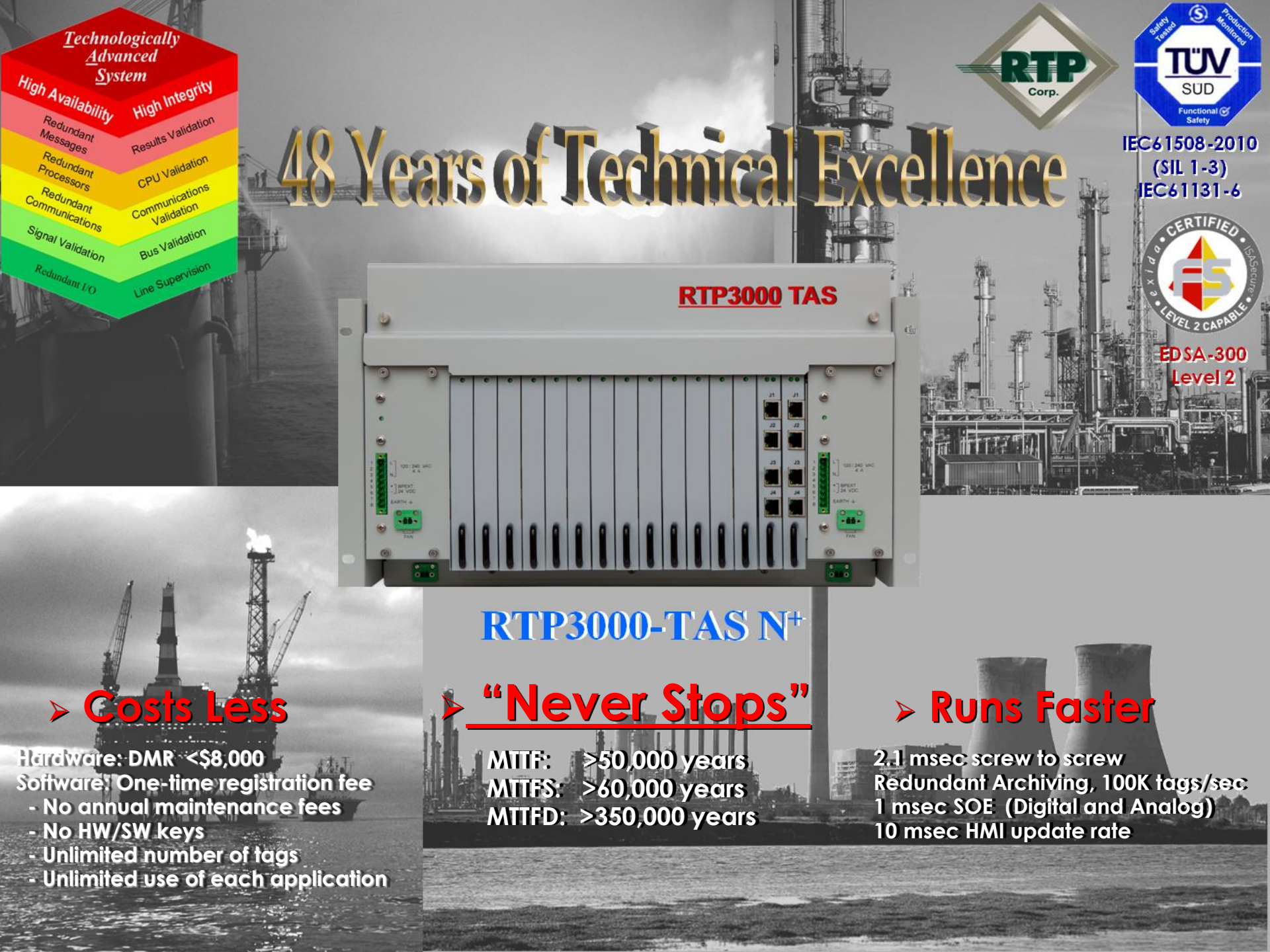
  2.1 Msec screw to screw
  1 Msec SOE (Digital and Analog)
  1 Msec Alarm time stamp

- **Never Stops:**

  MTTF >50,000 years (calculated from Markov Model per IEC 61508)

- **Cyber Security:**

  ISASecure Embedded Device Security Assurance EDSA 300 Level II
  AES Encryption Algorithm uses a block size of 128 bits and key length of 256 bits


Technologically Advanced System
High Availability
High Integrity
Redundant Messages
Results Validation
Redundant Processors
CPU Validation
Redundant Communications
Communications Validation
Signal Validation
Bus Validation
Redundant I/O
Line Supervision
RTP Corp.
TÜV SUD
Safety Tested
Production Monitored
Functional Safety
IEC61508-2010
(SIL 1-3)
IEC61131-6
CERTIFIED
exida
ISASecure
LEVEL 2 CAPABLE
EDSA-300
Level 2
48 Years of Technical Excellence
RTP3000 TAS
RTP3000-TAS N+
➢ Costs Less
Hardware: DMR <$8,000
Software: One-time registration fee
- No annual maintenance fees
- No HW/SW keys
- Unlimited number of tags
- Unlimited use of each application
➢ "Never Stops"
MTTF: >50,000 years
MTTFS: >60,000 years
MTTFD: >350,000 years
➢ Runs Faster
2.1 msec screw to screw
Redundant Archiving, 100K tags/sec
1 msec SOE (Digital and Analog)
10 msec HMI update rate