

North Shore Automation & Innovations Group Inc. (NSAAIG)

Automation & Controls Commissioning, Startup, Integration, Support, and Training Offerings – Jan 2022

The following is an overview of the current (and past) services & experience that NSAAIG has to offer. NSAAIG currently consists of two seasoned integrators, Mike Schoger and Paul Edgar who have a combined experience of over 50 years in the automotive, water/wastewater, and process control industries from to design to start-up & integration and troubleshooting. Paul and Mike have worked together for 15+ years in the automotive machine building industry with a great deal of exposure to automotive interiors & components manufacturing & processes. NSAAIG offers industrial electrical design, panel build, field wiring, programming, integration and start-up covering various industries.

Electrical Design

AutoCad (primary tool for electrical design)

AutoCad Electrical (Limited Experience, but can be offered)

Eplan (**Experience in the past, but Legacy now*)

SolidWorks Electrical (**Recent experience, but requires more training & use*)

Process Experience (incl. Electrical & controls design, programming, start-up & integration, commissioning & troubleshooting)

Polyurethane metering systems

Polyurethane Back-foaming systems

Polyurethane & Paint System Seating Lines, Steering Wheel lines

Bulk Feed Systems

Material Handling (Overhead Gantry) systems

Material Handling (Flat Conveyor) systems

Gas tank assembly systems

Carpet Molding lines

Cold Molding systems

Nat. Gas Fired Oven Controls Design, Integration & Startup as per US and CAD Specifications

Infrared Oven Control using various types of heating elements.

Hydraulic Press systems up to 300 ton

Ultrasonic Welding & Cutting systems with or without Robot handling, including multiple robot integration

Automotive Headliner forming systems with extensive servo controls

Automotive Door Panel Hydraulic Trim Presses

Hydraulic Punch Presses

Motor-driven Carpet Forming Press Systems with robot open-pour at multiple locations using different foam densities (requires fast change of flow-rate and mix ratio)

Integration of Paint, Spray and Material Handling Robots with or without Line-Tracking (see section "Robot Platforms" below)

Slush Moulding lines using either IR-Heating, Oil-Heating or Nat. Gas Heating. (In depth knowledge of NFPA standards for gas fired ovens)

Multiple robot integration with interference check/space check

Spot welding robot line experience involving multiple robots

Various Automotive Fixture Calibration systems involving servo &/or robot integration

Leak testing stations

Poke-Yoke Stations, Marking Stations

Past experience in Water/Wastewater Instrumentation, Integration & Facility Startup

Scada Systems & Database Integration (see "Scada" section below)

Airport baggage handling start-up & debug experience

Past experience in the Lumber, Mining, Oil & Gas and Petrochemical Industries

Management

Mike Schoger - 13+ years experience as Controls / Electrical Engineering Department Manager – managed 4-14 controls engineers, technicians, technologists and electricians

PLC, Fieldbus, HMI, VFD & Servo, Safety Controllers

Rockwell:

Studio/Logix 5000

PLC 5

SLC 500

Panelview, Panelview Plus
Devicenet/EthernetIP/Profibus/ControlNet integration
PointIO fieldbus
CIP Safety / Guardlogix
Ultra 3000, Kinetix 5000, 5500, 5700, 6500, 7500 Servos
Integrated Motion including positioning and gearing
1305, 1336 Plus/Plus II, Powerflex 4,40,70, 400, 525, 537, 755 VFDs w closed-loop (PID) control

Siemens:

Step7 (S7-300 (315, 318 CPU), S7-400 platforms, IM151CPU)
TIA Portal (S7-1500, S7-1200 Series CPUs, incl. ProfiSafe)
Protocol, WinCC software platforms
ProfiSafe
Profibus/DeviceNet/ProfiNet Integration
ET200S fieldbus (Profibus, ProfiNet, DeviceNet)
Step5 (***Past experience, but Legacy now**)
Masterdrive MC, VC (with closed-loop control) with Step7 controller incl. ProfiNet/ProfiBus/DeviceNet
Micromaster 420, 440 VFDs - with closed-loop (PID) control incl. ProfiNet/ProfiBus/DeviceNet
Sinamics S120 servos with Step 7 & TIA Portal incl. ProfiNet/ProfiBus
Sinamics G120 VFDs integrated with TIA Portal or with Step7 controller incl. ProfiNet/ProfiBus

Mitsubishi:

Q-Series CPU
GX-Developer (PLC), GX-Configurator (Fieldbus), GTWorks (HMI)
F700, E700, E560 series VFDs

Omron:

CXOne platform, incl. Motion (Servo control)
EthernetIP/DeviceNet integration
NS Series HMI
NA Series HMI
Sysmac Studio, incl. Motion (Servo control)
CIP Safety, NX Safety
G5 Series Servo controller, incl. torque control - etherCat
R88D Servo Controller, integrated motion in Sysmac Studio, electronic gearing, etc.- EtherCat (***Recent training**)

GE:

90-30, 90-70 PLC Platforms (LogicMaster) – (***Extensive experience in the past, but Legacy now**)
PAC Systems RX3i Controller platform, RSTi Fieldbus Platform, (Proficy Machine Edition Software) – **Current project experience**

Beckhoff:

TwinCat3 (***Recent Training incl. motion control – 2019/2020 - and recent project experience, with Fanuc Robot integration - 2020**)

Other fieldbus:

Beckhoff Bus Terminal fieldbus
SMC IP67 pneumatics & integrated IO – DeviceNet, Profibus, EthernetIP
Parker IP67 pneumatics & integrated IO
Numatics IP67 pneumatics & integrated IO – DeviceNet, EthernetIP
Festo CPX IP67 pneumatics & integrated IO with IOLink – ENetIP, ProfiNet
Balluff PI67 BNI IO blocks with IOLink
B&R X20 fieldbus

Other Servo / VFD platforms (besides Siemens, Rockwell, Omron, Mits., GE):

SEW Movidrive B servo
SEW Movitrac VFD
SEW MoviAxis multiaxis servo
Indramat (***Experience in the past, but Legacy now**)
Parker Compax 3 servo controllers

Linear Servos/Steppers:

Parker GT-Series Stepper Drives
IAI RoboCylinder stepper motor SCON controller, ERC2 controller w integrated stepper
SCX11 Oriental Stepper Motor controller

Safety Controllers:

Integrated CIP Safety & Guardlogix Components incl. CIP Safety with Fanuc R30iA Robots & Kinetix Servos & PowerFlex Drives
PILZ PNOZ modular safety controller
ProfiSafe – with Siemens S120 servos, G120 VFDs, S7-1500 CPU, Kuka KRC4 Robot

Banner XS26 Series Modular Safety Controller
SICK FlexiSoft Modular Safety Controller

SCADA, Other HMI, Database, Higher-Level Programming

Other HMI (3rd Party)

ProFace Operator Interface (Zycom software)
Maple Systems (EZ-Ware software)
Beckhoff CP (utilizing Indusoft)

Scada & Database:

Wonderware, Wonderware InSQL
Indusoft
Citect
Intellution FIX
RSView32, RSSQL
MSSQL, Crystal Reports
MSAccess Database Development
Labview (general working knowledge) – Paul E.

Higher Level Programming Experience:

C, QNX-C, Visual C
Visual Basic
Fortran
Pascal

*(*Extensive experience in the past with all, but mostly Legacy now, except Visual Basic which is required from time to time.)*

Communications

Siemens SCALANCE (Leaky Coax) – 5GHz wireless
EthernetIP, ProfiNet, Profibus DP, DeviceNet, ControlNet, GE Genius bus,
ProSoft RadioLinx Profibus DP wireless modems
Siemens Power Rail Booster (Leaky Coax), Profibus-DP
Omron WD30 DeviceNet wireless modems
Integration of various Communications Modules from 3rd parties such as SST, Anybus, ICC, etc. etc.
Rockwell Stratix Integration including DLR and PTP

Robot Platforms

Fanuc:

Fanuc RJ3, RJ3iB, R30iA, R30iB controllers
Paint Robot Controllers eg. P-350
Line Tracking Option
DCS Integrated Safety Option with CIP safety
IR Calibration Option
SafeMove feature
Frame Offset feature
Intelligent Interference Check
Experience with heavy use of Position Registers & System Variables
EthernetIP, Profibus, ProfiNet, Devicenet communications

ABB:

ABB IRC5, S4C controllers *(*Solid experience with S4C in the past, but mostly Legacy now)*
Conveyor Tracking option
World Zones, Interrupt programming, offsets
SafeMove Option
EthernetIP, DeviceNet, Profibus, ProfiNet communications

Motoman:

XRC2001, NX100 Controllers
Frame Offset feature
Conveyor tracking feature
EthernetIP, DeviceNet, Profibus communications.

Kuka: (*Recent training at Kuka.)

**-2-3 Projects completed in past 3 years having integrated robot controllers in Siemens TIA Portal including ProfiSafe
-Completed KRC4 Compact Kuka programming & integration for a Jan 2018-Aug 2018 project**

WorkVisual
KRC4 compact controllers
EthernetIP, ProfiNet, Profisafe, TCPIP communications

Denso:

HMG Series Robot Controller w DeviceNet (Pick & Place application)
HM-40602M 4-axis Robot (Scara Robot)

Yamaha:

RCX222 - 2-axis servo (pick & place application)

Vision/Other

Gocator 3D vision (**Recent Project**)
Bluewrist Vision Software Suite (**Recent Project**)
Cognex (sporadic experience)
Keyence Laser Marking Systems
Keyence Vision Systems
Atlas Copco Torque Gun Integration
Telesonic Ultrasonic Weld Controllers
Nusonic Ultrasonic Welding & Cutting Controllers
SIC Marking Units
Various BarCode Readers (Keyence, IFM, etc.)