Greg M^CCormack – Control Systems Engineer

Professional Profile :

Control Systems Engineer, with exposure working across many different industries and most sectors of control engineering.
Conversant with a broad spectrum of Languages, SCADAs and PLCs.

Enjoy being a team player, sharing results and successes with the team around me, I am comfortable in a senior role, sharing my knowledge and experience with junior engineers.

"Highly respected by all those around him, with his professional approach, gets on well with fellow engineers and customers alike. "

References available on request – Please contact me - grmccormack@googlemail.com

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Education and Qualifications :

1981 – 1985   **BSc in Electrical and Electronic Engineering** from Liverpool John Moores University (Liverpool Polytechnic)

2017   **17th Edition Wiring Regulations** and became a Part P Registered Domestic Installer with the NICEIC

Recent Career History :

B2Controls , Altrincham - Siemens Transportation Systems UK, Leicestershire - for the Crossrail London.
Working as a Software Developer   using (a variant of) Pascal, Visual Studio, .Net , Plastic SCM (a cross-platform distributed version control system), Jira (collaborative agile ticketting system for software development) and many bespoke packages for the development of the SCADA system for the monitoring (via OPC connections) of the Crossrail stations and infrastructure.

Over the Summer2020 C++, Python, Gtk, Julia (based on Matlab and Python), PlatformIO on Visual Studio and other IDEs

Feb 2020 – Laid off due to Corona   Software department at Thyson Technology – they design and manufacture Grid Entry Units for Gas and BioGas into the Gas network. Increasing the calorific value by adding propane prior to injection into the grid.

Autumn 2019 – Feb 2020   **Cygnet Texkimp** in **Northwich,** a short three month contract, they manufacture carbon fibre cutting and winding machines for customers around the world. They needed assistance coding their Beijer HMIs with Beijer's iX Configurator. Written in **C#**, users can write scripts to do more challenging tasks. As always the challenge is to find a slick way of coding the HMIs using aliasing and tag replacement – doing as much coding as possible outside the iX developer. Then moved on to a Robotics job designing / programming a Siemens 1500 which was scheduling robotic activities.

Sept 2018 – Spring 2019   Worked on contract for **GEA, Warrington**
Working primarily on one of their customer's sites - Greencore, commissioning cookers for the ready meal market. The cookers needed batch sequencing, and CIP (Cleaning In Place) which was done to exacting standards. The system used Allen Bradley with Wonderware InTouch Scada system with a bespoke recipe management system.

PLCs

Siemens	TiaPortal S7-1500, S7–300's & 400's TwinCat 3 *
Rockwell - Allen Bradley	PLC5 , SLC500, ControlLogix, RSLogix5000
Modicon	9845
Texas	5TI, 530
CEGELEC	Gem80/131 165 312
Mitsubishi	F2-60, A1N
Moores	APACS – 4mation DCS
Sattcon	05-20, 15,31,OP45,OP65
Klockner Moeller	PS2
Omron	C20, C200HS
Sy/Max	500, DLog, Loader Monitor
Bristol Babcock	DPC 3000 range

SCADA \ HMI Systems

Siemens	WinCC and WinCC Flexible
Allen Bradley	FactoryTalk
Wonderware	InTouch
Moore Products	ProcessSuite \ MicroAdvantage
GE	iFIX 5.8 and FIX32
Bristol Babcock	Enterprise
Mitsubishi	MAC50 , Beijer iX Developer

Office

Microsoft	Office – Excel, Word, Dbase, VStudio, VB MSProject
OpenOffice	scalc with macros and faceplates, Database and Drawing Package.

Networks

DeviceNet, Profibus DP & PA, Fieldbus, Hart, ASi

Naturally I also use many other software packages including :- SQL, Python, C , OO_Basic, RemoteDesktop, TeamViewer, VNC, VirtualPCs, VMware Workstation, Oracle VirtualBox, Acronis, WinAC, MicroWin, ProTool & Arduinos and RaspberryPi's, Putty, php, GitHub & VersionDog. Most recent project : https://github.com/GregMc/MorseOnArduino see my YouTube video from the GitHub link.

One of my Raspberry Pi's sits on my router as my webserver – hosting about ten websites and another is a universal configurator, my mini Fileserver running OpenMediaVault and hosting paid for video services to the TV.

For more information:- Qualifications and History – Please visit my website

Curriculum Vitae of Greg M^CCormack

LinkedIn

http://GregMcCormack.uk
CV Text Version Here   Last Updated : September 2021

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Career History continued :

August 2017 – Sept 2018   **DENCA, Widnes**
Upgrading the powder handling system for Heinz, Wigan. IFix 5.8 was the top end. The project involved removing the existing Siemens S5 system(s) and replacing them with a single S7-1500 (TiaPortal), with the added complication of poor documentation and having to ensure that the system changeover happens with the minimum of disruption and downtime.

Spring 2016 – August 2017   **ATG-Airports, Leigh**
Designing runway and taxiway lighting systems for Manchester, Dublin,Malta, Cardiff, Farnborough airports (to name a few). Interesting and rewarding work – but unfortunately contract came to an end in August 2017. Siemens S7-400 and 300 and WinCC and WinCC Flex as well as bespoke uses of databases and sophisticated macros in OpenOffice.

With Peak42 (Daresbury, Cheshire) as a Systems Engineer. Their projects tend to include an element of Project Management for and behalf of their customers, who include Kelloggs (in Wrexham) and EON Power Station near Nottingham and United Utilities.

Working as a System Engineer and also had the role of Service Support Manager for adi-Automation from their office in Speke. I was working on a Deaerator for an oil rig drilling system using RSLogic 5000 ControlLogix and FactoryTalk HMI. I developed all-encompassing faceplates for the motors, valves and instrumentation – making far fewer setpoint pages necessary. I also worked with WinCC and S7 for Contour Global CHP Plant in Knockmore, Northern Ireland.

Working with Cougar Automation as a Control DCS \ PLC \ SCADA Engineer, working exclusively for United Utilities on S7, WinCC and WinCC.

When my family was younger – to better fit in with family commitments, I re-trained as a Domestic Installer, installing electrics and plumbing into the domestic market. I was a business owner for in excess of 10 years but towards end, I yearned to get back to industry and serious engineering. Whilst being a Domestic (Electrical) Installer, I always maintained my software skills and saw a niche in the market for software that can combine the flexibility of a spreadsheet with the power of macros – this software I have sold many many times on eBay. The EQIC software can be found at AllertonEPS-Software.co.uk
As you will read later, until I moved to Helsby I was heavily involved in Thingwall.org.uk – the local community centre for Wavertree Garden Suburb, as an electrician and on the committee. Using QLC+ to control the stage lighting, which could also sit on a Raspberry Pi (which could in turn then be controlled from a webpage from a browser on your phone).

Effluent treatment plant using Siemens S7-300 and OpPanel – TP270 configured using Protool for Arla Foods, Stourton, Leeds.

Computer Systems Validation for Simon Carves on one of their customer site's – MedImmune a pharmaceutical company in Speke, Liverpool. At Simon Carves I worked as a Computer Validation Engineer, validating a BAS - Building Automation System. I generated major validation documents (mainly computer validation) and strategies for the operational cleaning of the equipment. All aspects of the job were validated to ensure compliance with GMP and 21CFR Part 11**.**

Glaxo, Stevenage. Their pilot plant uses a Yokogawa high integrity system, it is controlled by a Siemen's (formerly Moore Products) APACS system with a front end consisting of Siemen's PROCESS SUITE (which is just a badged version of Wonderware's VISION system). I assisted during the commissioning and first runs of their systems, which included Siemens S7 PLCs controlling specific machinery which communicated to the APACS system.

Working for Siemens using **4-mation** and **iFIX** SCADA system mainly for CP Kelco (Knowsley Industrial Estate).
The customer site makes Zanthan gum (a thickening agent used in comestics and toothpastes etc…). The process is primarily fermentation, but includes sterilisation, injecting alcohol during a pressing process to produce a fibrous cake which can then be dried, with the end product being bagged as a powder. The plant needed Air Compressors, Chillers, Powder handling systems and obviously Batch control. We also achieved full automation of the alcohol recovery distillation column. During this 4½ year period I revolutionised the control in almost all areas of plant – bringing huge improvements in product quality and huge reductions in wastage. I also devised a software production method – which permitted the Alarm and PID parameters to be stored in EXCEL spreadsheets instead of the PLC. I also developed libraries of control modules and their associated graphics that were portable elsewhere. FDS and SDS were produced. **TwinCAT 3** is very similar to 4-mation.

I also gave courses on 4-mation to external clients from the head office of what was Moore Products in Yeovil. (see later)

S & I PC, Bradford – designing the skeleton of the control system for Bransands Water Treatment Works, Northumberian Water. Design documentation was pivotal for the controlling the team of engineers.

INBIS, Bamber Bridge, AllenBradley coding for production line for the Rotary Switches (in steering wheels of Rover Cars) for Lucas Automotive Parts using SLC504's. Also AB coding for Durability Test Rig for the same (using SLC503). Again a more novel approach permitted easier future implementation of slight variations.

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Career History continued :

Working for BWI Manesty in Speke, Liverpool doing Validation (IQ & OQ) / Commissioning for the Pharmaceutical industry. This involves writing Validation documents (including FATS) and performing validation services on customer's sites. I have also been involved in the more general commissioning (including loop tuning) of the machines. Also commissioning in Spain - being the company's sole representative on site – (improving my Spanish quickly).

Working for Purac Limited (again), Kidderminster on a Rapid Gravity Filter installation for Welsh Water. Using Moores Industrial Controllers and their proprietary APACS Graphics System. Moore Products was bought by Siemens, and then closed (Siemens were acquiring it to close down the competition).

This was a 7 month stint in Yorkshire, with SHS a conveyor manufacturer installing their systems into a Linpac factory in Featherstone, near Wakefield and another site near Bamber Bridge. The product being transported was stacks of cardboard, these stacks were so variable in their weight, size and stability that coping with all the variables becomes quite a challenge. We were using Allen Bradley SLC500's and I was able to employ structured design techniques which formed the basis of work on other sites.

Wainwright and Gibson, a subsidiary of Mowlem Engineering on the Wirral. Nearly all the project's were water utility contracts, particularly for Thames Water Authority. On the Deephams project I was the lead engineer of the Systems department, involved in the project management, software documentation, development, testing and finally the commissioning on site. Using SATT Controls.

Working on a contract basis for Capstead Systems Ltd of Oldham on a BNFL project; the conveying system for the WAMAC facility in Cumbria. It included a tracking system to enable the accounting of the boxes at all times, and to be able to route them further along the conveyor after the inspection point. Being a BNFL contract; documentation and test procedures were of major importance during the project's development. I was the primary source of all the code and documentation for the project.

Working on a contract basis for Bristol Babcock Ltd, Kidderminster, in the offshore team, supporting the on-going requirements of the third party entrants in the Ninian Oil Field. The work involved regular trips to the North Sea, to support the SCADA system. (Babcock's involvement was safety monitoring.)

Working on a contract basis for PURAC Ltd, Kidderminster. The work involved design of a program to reside within the Foxbase database environment, to significantly aid the manipulation of the various databases that constituted different aspects of the project. (At the time it was a novel approach – the same can be done now in Access or Excel – and the company kept elements of my work for use on other projects for many years afterwards.) The databases were of wiring and terminal allocations, SCADA information, PLC information, communications information and field instrumentation data. The program allowed an automated means of combining these databases, checking them, and extracting the relevant fields for direct insertion into the SCADA database.

Working on a contract basis for SSI Control, Rotherham. Designing, programming, commissioning two SATTCON 15-20 PLCs. Both were for sewage treatment plants in the Thames Water Authority area. For both works the PLC was responsible for the control of the common plant pumps / blowers; the communications to the filter PLC's; the communications to the operator's terminal; the queuing of the filters to be backwashed and the generation of the wash commands to the filters. The common plant pumps and blowers all had Duty/Standby control systems, and restriction on starting to avoid power-surging. Care had to be afforded during the design stages, to ensure that the system would recovery from all failures, since they were largely unmanned sites. Communications scan rates were kept to a minimum, typically less than 6 secs to cycle all filters.

At INSTEM Computer Systems, I was working as a systems engineer for the WAMAC Container Handling Facility, moving containers around caves. The BNFL work involved a great deal of triple engineering, making sure backup of the backup system would work correctly.

At APV in Peterborough, working as a Systems Engineer in the Special Projects Division :-
· Software Design, implementation and commissioning of a Omron C20 and DB Basic Module.
· Design of a model for simulation testing a batch control system.
· Design of electrical hardware for a biscuit assisted feeder.

My formative years – nearly three years at Aughton Process Automation working as a Systems/Software engineer working on projects as diverse as "pumping and barrage control" for Water Authorities to Brewing, Powder Handling and Product Handling for the food industry.

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COURSES – Received and Given

CCNSG (was valid till March 2016)   Profibus Presentations

CSCS   (was valid till April 2018   )

National Water Hygiene   (was valid till March 2016)

Domestic Installer Qualifications   C & G 2381 & 2391 (with Update for 17th Edition Wiring Regulations)

C++   ,   VBnet   ,   Database Design (using MS Access as a platform)

OLDER COURSES

- Industrial Chemical Engineering   - Software Design
- Yourdon – Real Time Structured Design   - Time Management
- Programmable Controllers :- AB G E SATT   - Presentation Skills Course
- Scada Packages :- INTELLUTION, WONDERWARE , AFE
- Simulator Software :-   ProgSim

COURSES GIVEN

Siemens Moores 4-mation courses   (I stood in for the normal trainer and gave in-depth (week long) training courses to both external clients and new recruits to the company)

HANDS ON

My experience includes :-

- Subroutines & Functions which are lift-able code segments which greatly reduces commissioning and validation times.
- The lift-able code segments also have matching graphics and their corresponding templates using indexing files.
- Route Cause Anaysis and corrective action to limit downtime within the constraints of the environment.
- Data analysis and preparation of data for presentation on internal webpages.
- The simulator packages for bench testing software thoroughly on a break-to-fail approach rather than switch-to-run.
- RaspberryPi's configured running LAMP – Linux, Apache2 and PHP acting as Webserver and CUPS for a Printer Server.
- Arduino running a Morse Code Simulator - https://github.com/GregMc/MorseOnArduino **and a YouTube video**
- Coming soon Morse on Julia on RaspberryPi

INTERESTS

I am very family centric – so I cycle both to maintain my personal fitness, and as a family to encourage my daughters to have independence and fitness now and in the future.

I have recently discovered http://www.MeetUp.com/ where people with similar interests meet and I have found an outlet for my broader software interests. I am very interested in free software and love the fact that the community can help with the development and reporting of bugs – which gives me as an individual great buzz knowing that I have done my little bit to help improve Open Office and other software.

ADDITIONAL INFORMATION

Please see my website for a greater appreciation of the scope of my career. The **EQIC** software I mentioned earlier is for use by small businesses to help them with their **E**stimations, **Q**uotations, **I**nvoices and electrical **C**ertification – I have created a 100 page EQIC_UserGuide.pdf (5½ Meg) for the EQIC Software – which is accessible from my website. EQIC is entirely my own creation, from concept to customer ready implementation of the package.

I enjoy most outdoor sports and activities. As a Domestic Installer, I had (and still have) many many happy customers only too glad to recommend my services which come with in-built - technical knowledge and confident advice.

Even since returning to mainstream engineering, I have had to let my registration as a NICEIC Part P Domestic Installer lapse – however can obviously bring some very valuable experience and knowledge with me.

I am a big fan of DropBox and have recommended it's use 20+ times. As a consequence I have in excess of 15 Gigs of space on it.

I am in the Bass section of the Liverpool Male Voice Choir and I am their Pubilicity Officer and Treasurer. I have developed **AccountKeeper** (UserManual.pdf - 1½ Meg) a sophisticated spreadsheet to keep the accounts and have shared it online. It is entirely my own creation, from concept to customer ready implementation.

Please feel free to contact me on 07944 296136 or 0151 601 2095 (my Internet phone)