Benha University

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Industrial Controls (1)

By

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Lecture (1)

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Historical Background

The **Hydramatic Division** of the **General Motors Corporation** specified the design criteria for the first programmable controller in **1968**

Their primary goal

To eliminate the high costs associated with inflexible, relay-controlled systems.

Historical Background

- The controller had to be designed in modular form, so that sub-assemblies could be removed easily for replacement or repair.

- The control system needed the capability to pass data collection to a central system.

- The system had to be reusable.

- The method used to program the controller had to be simple, so that it could be easily understood by plant personnel.

Programmable Controller Development

- 1968 — Programmable concept developed
- 1969 — Hardware CPU controller, with logic instructions, 1 K of memory and 128 I/O points
- 1974 — Use of several (multi) processors within a PLC - timers and counters; arithmetic operations; 12 K of memory and 1024 I/O points
- 1976 — Remote input/output systems introduced
- 1977 — Microprocessors - based PLC introduced

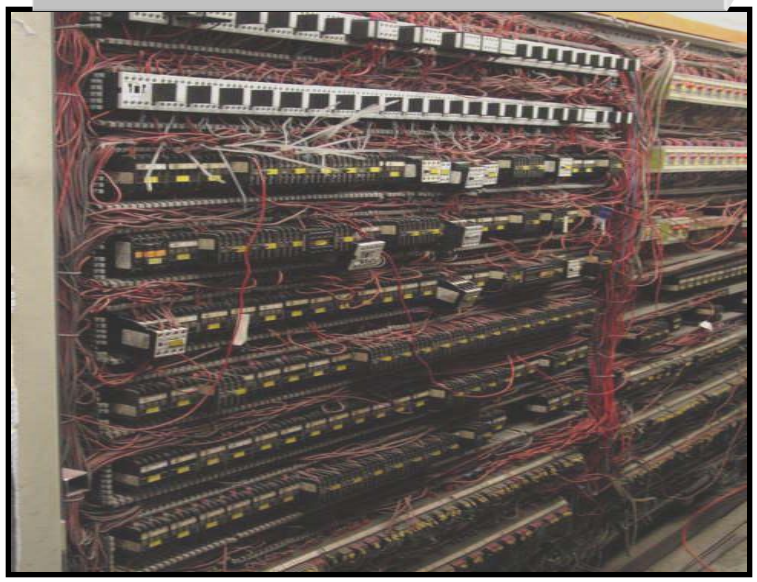
Programmable Controller Development

1980 – Intelligent I/O modules developed
Enhanced communications facilities
Enhanced software features
(e.g. documentation)
Use of personal microcomputers as programming aids

1983 – Low - cost small PLC's introduced

1985 on – Networking of all levels of PLC, computer and machine using SCADA software.

Exist



Desired

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Programmable Logic Controllers
(Definition according to NEMA standard ICS3-1978)

A digitally operating electronic apparatus which uses a programming memory for the internal storage of instructions for implementing specific functions such as logic, sequencing, timing, counting and arithmetic to control through digital or analog modules, various types of machines or process.

Thank You For Your Attention

Mohamed Ahmed Ebrahim