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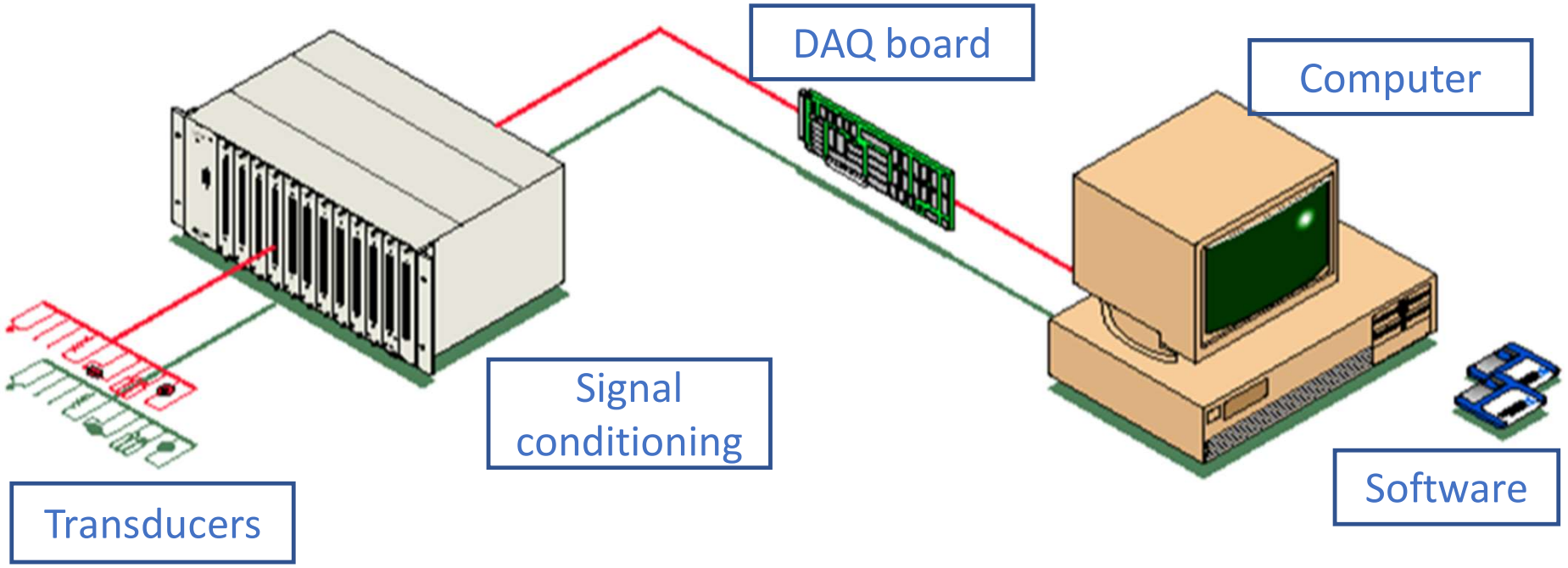
Cyber-Physical Industrial Systems

Module 2 Session 1

Data acquisition basics

Lecture

Typical DAQ system



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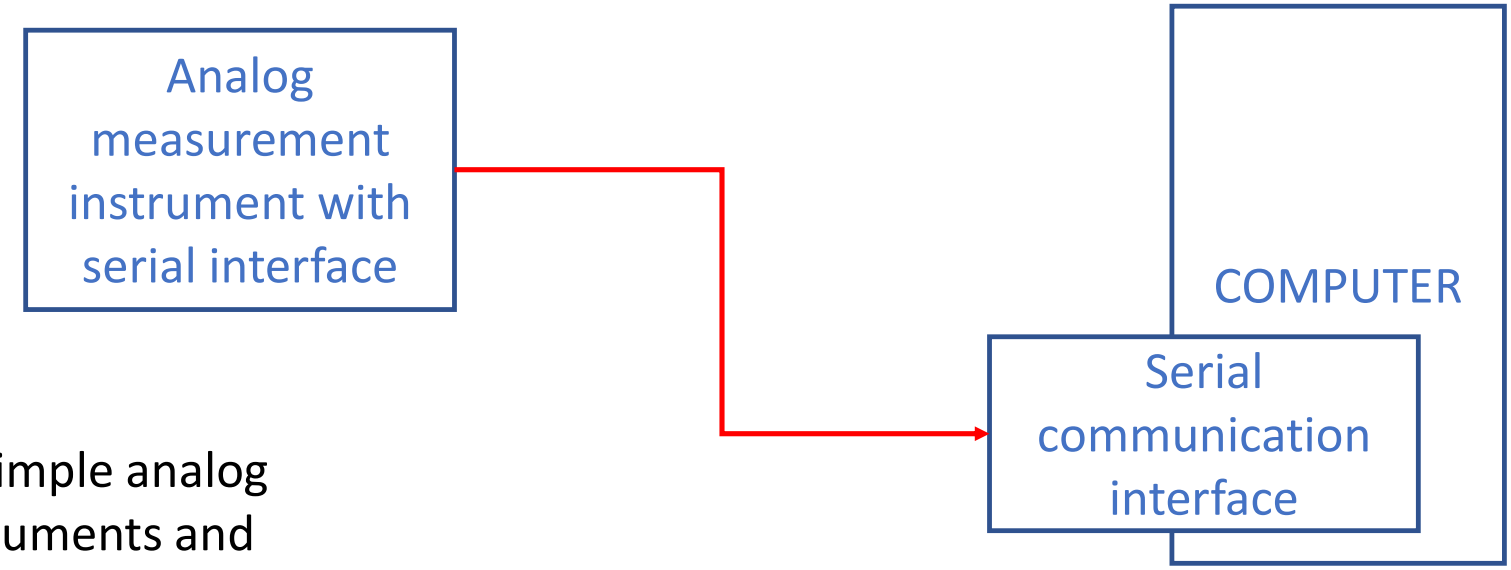
Serial communication DAQ system



For simple analog instruments and slow signals

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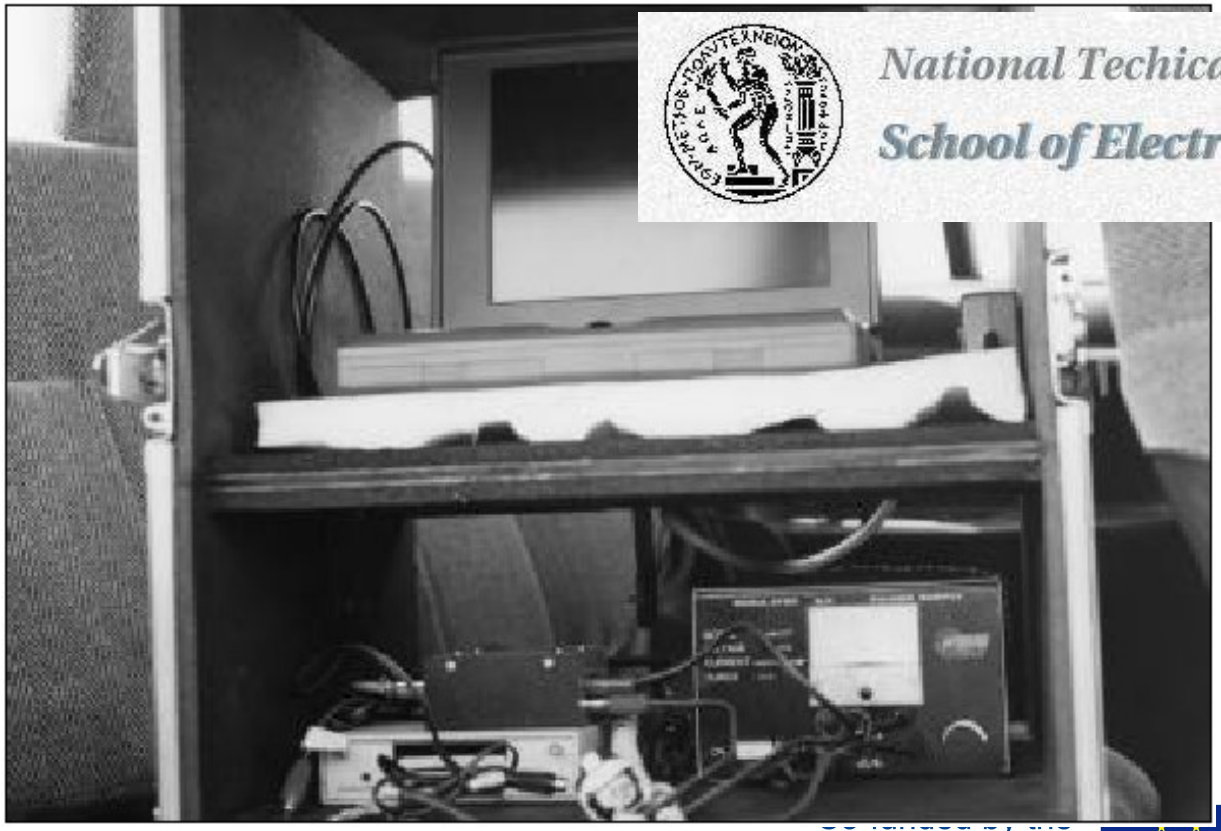
Serial communication DAQ system



National Techical University of Athens

School of Electrical and Computer Engineering

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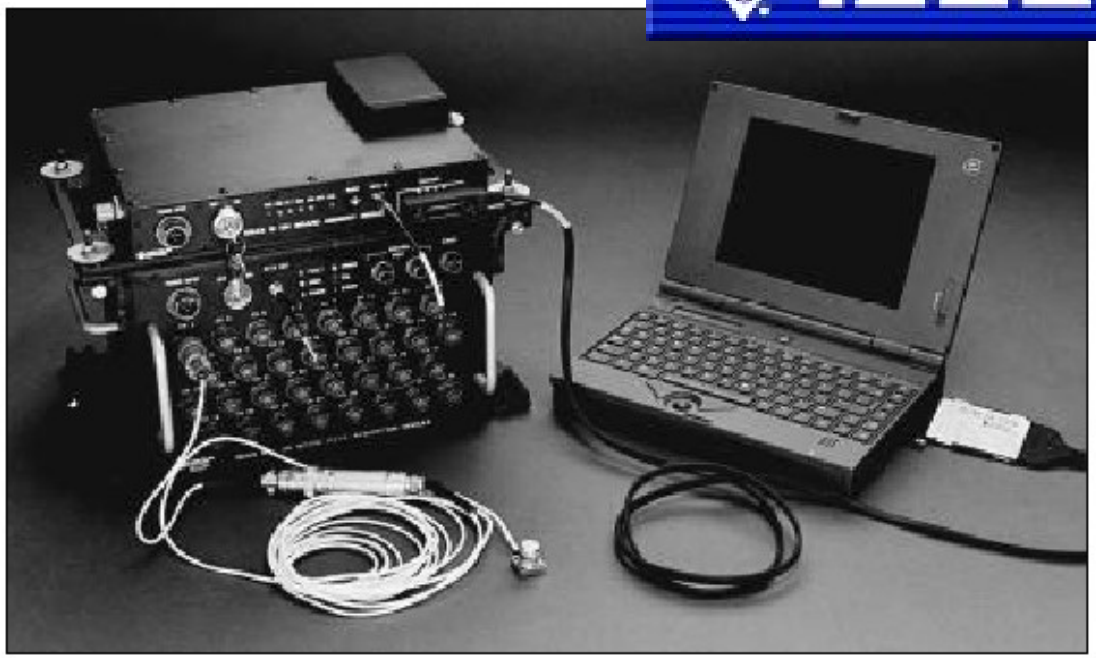
Serial communication DAQ system



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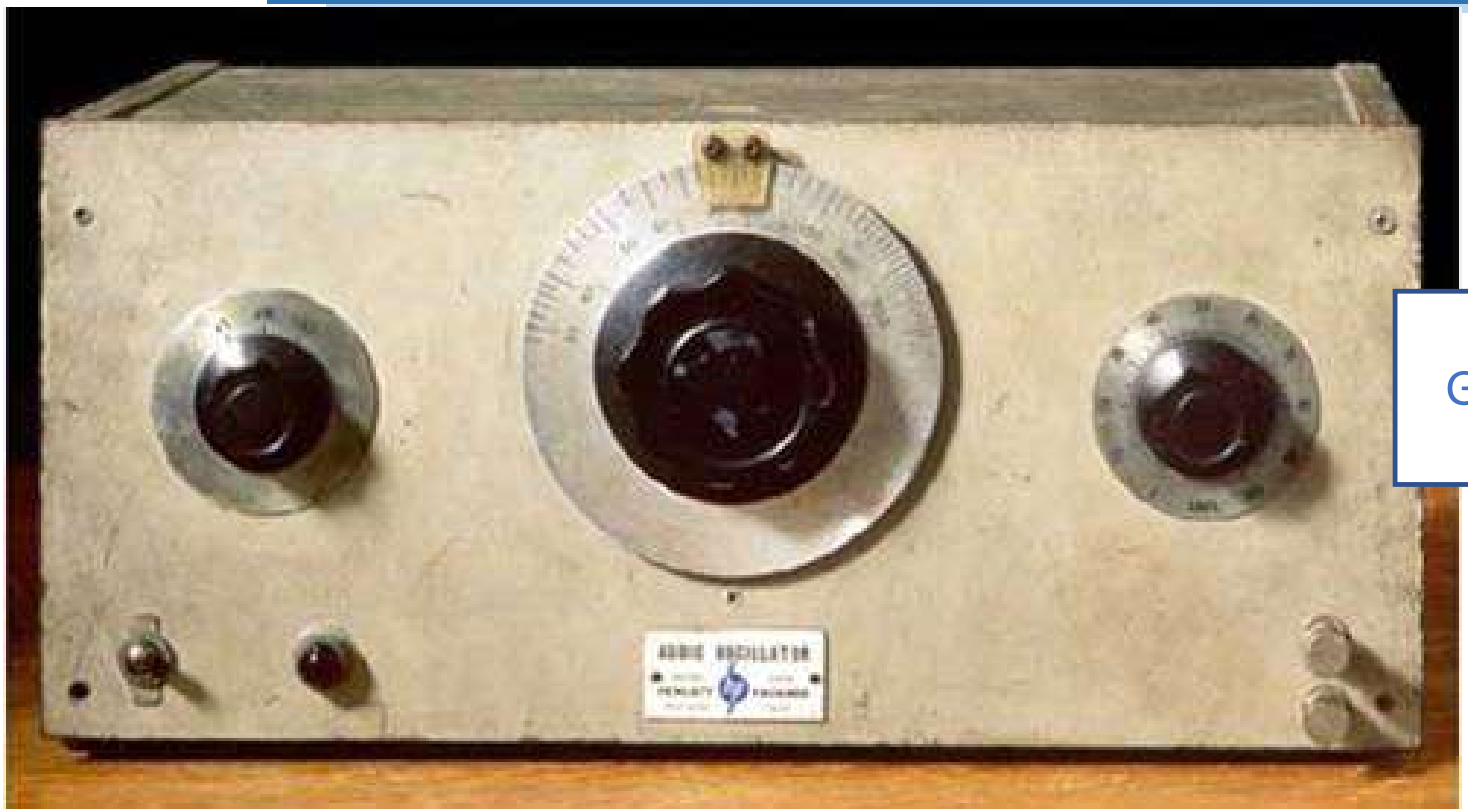
Serial communication DAQ system



Bill Hewlett
Graduation project
1938

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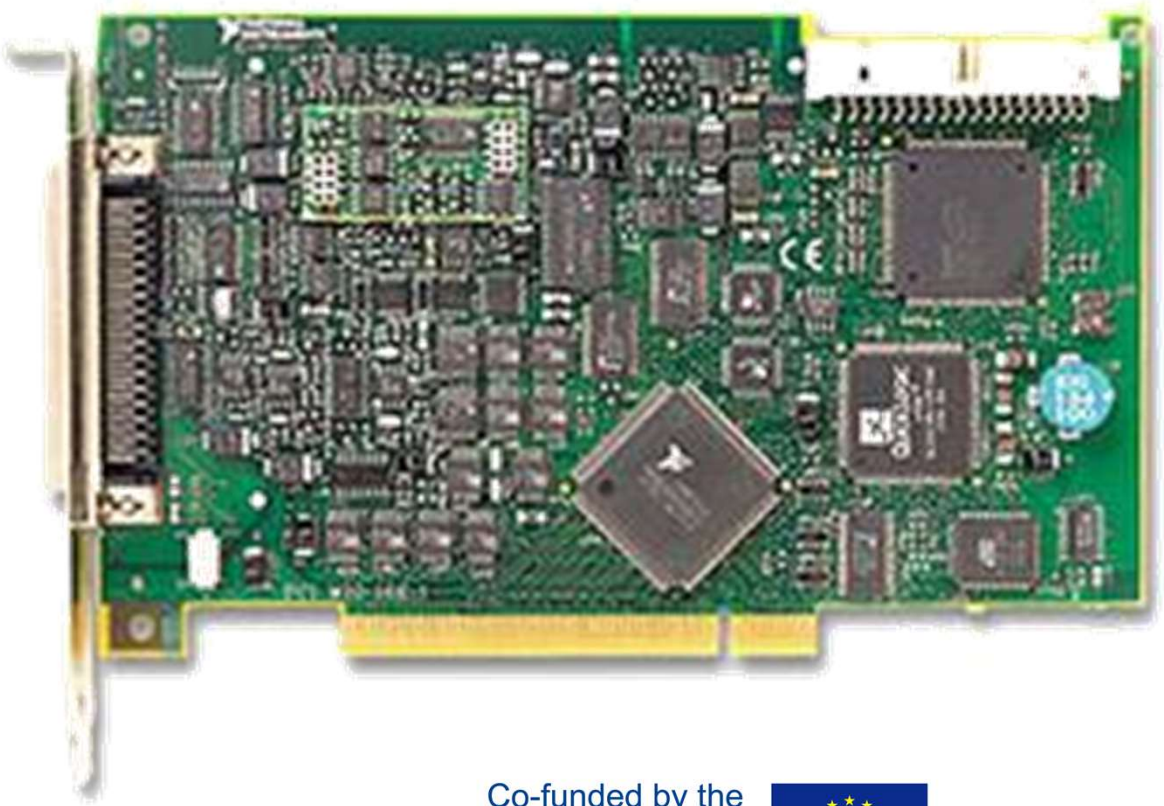
Multifunction DAQ boards



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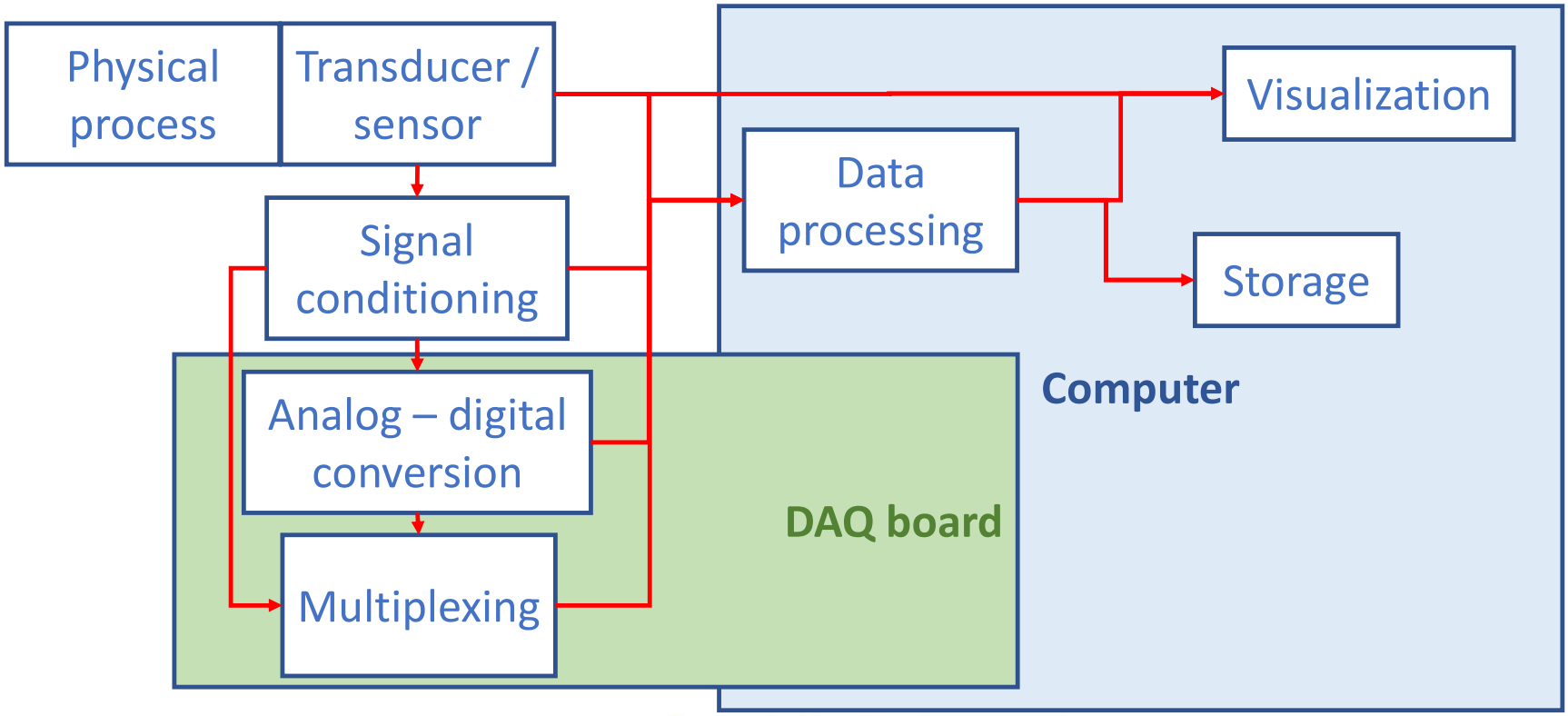
Multifunction DAQ boards



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DAQ boards functions

Functions

- Analog Input
- Analog Output
- Digital input/output
- Counting / Timing

Performance indicators

- # of channels
- Maximum scan rate
- Measuring interval
- Resolution
- Accuracy
- Linearity

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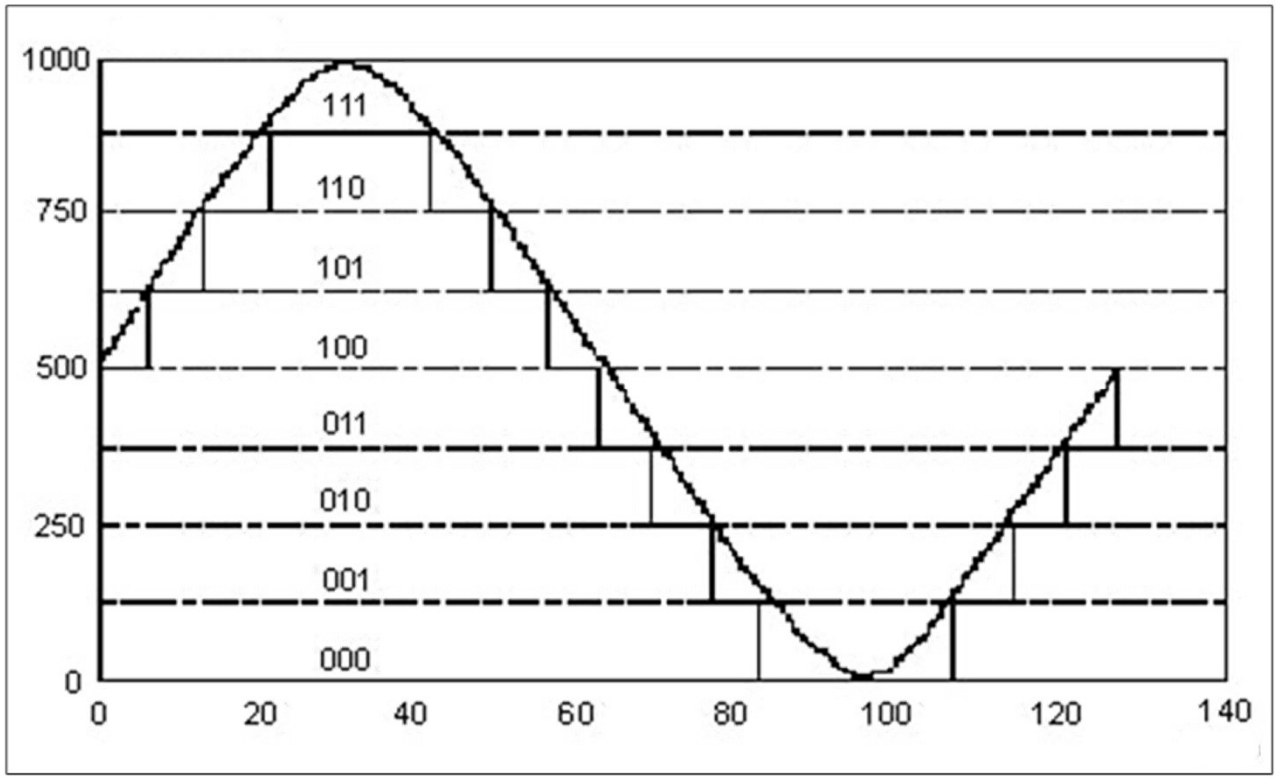
Resolution



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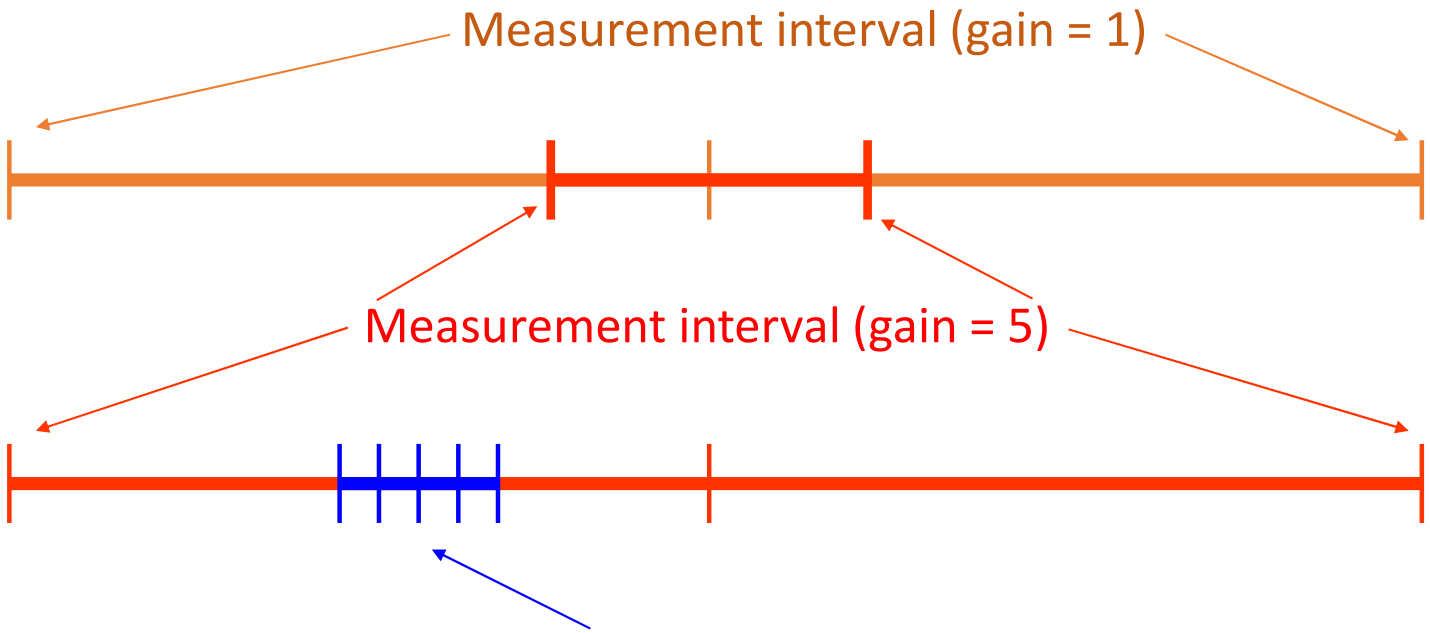
Accuracy



$2^{\text{resolution}}-1$ **subintervals**

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Distributed DAQ systems

FieldPoint

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Integrated DAQ systems

PXI

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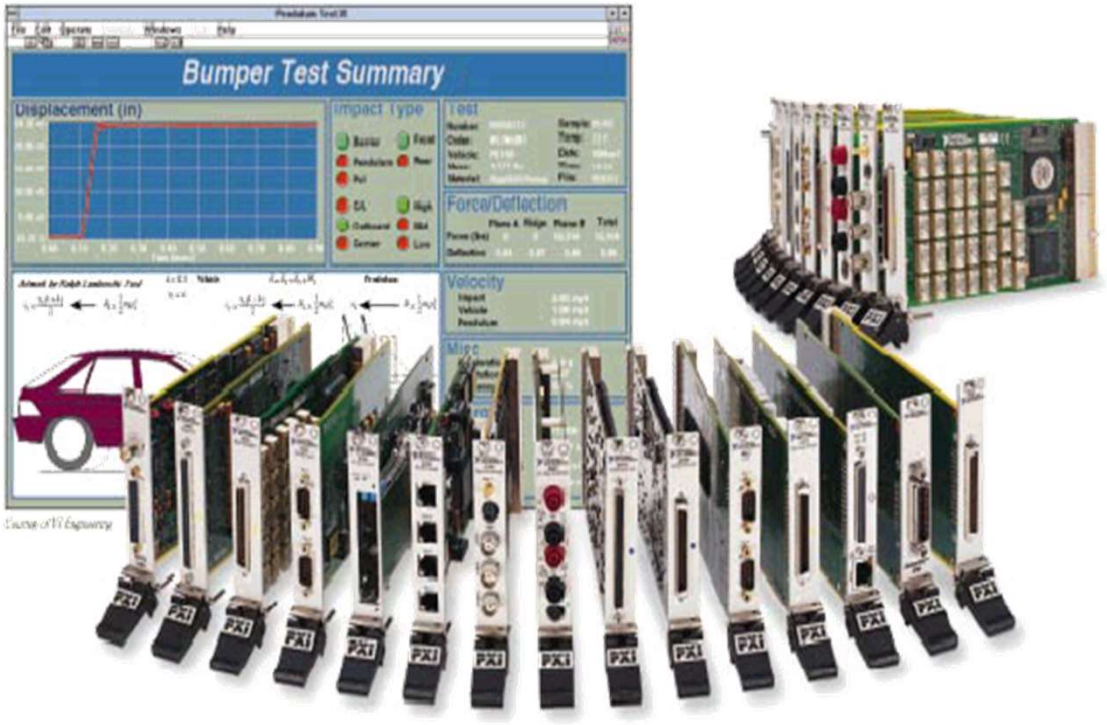
Integrated DAQ systems



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DAQ evolution

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