

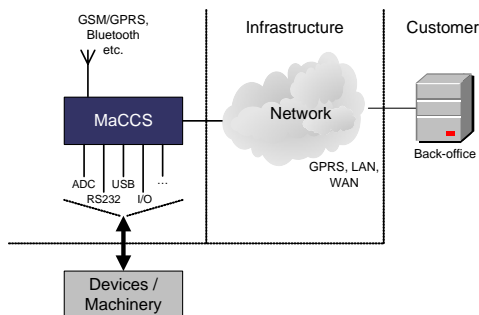
## Centric TSolve MaCCS:

### Management Control & Communication System

#### Centric TSolve MaCCS

In complex environments and processes is an increased need for information & control between remote systems, machines and applications in order to manage them more efficiently. Reliable and more secure data transfer using wireless networks results in a growing number of applications.

MaCCS solves the communication problem for many mobile applications and applications with limited wired network access and/or expensive wiring. MaCCS, as shown in the figure below, acts as a communication bridge between hardware like: sensors, machines, industrial equipment, vehicles, (process-) computers and software systems like back-office- or ERP-systems.



#### MaCCS capabilities

MaCCS has the following capabilities:

- Remote monitoring/control
- Remote diagnostics
- Acquisition, Analysis & Storage
- Remote software updates

MaCCS enables you to provide new services to customers or extend existing ones. MaCCS is designed for:

- Flexibility
- Reliability
- Scalability
- Global use
- Throughput Optimization
- Secure communications
- Durable usability

#### Application areas for MaCCS:

- *Transport & Logistics:* vehicle- and fleet management, warehouse management system.
- *Industrial:* machines, installations, SCADA.
- *Energy:* heating, fuel cell, solar cells, windmills.
- *Infrastructure & Utility:* electricity, gas, water, road, rail, pipelines, ships, buildings.
- *Security & Surveillance:* cameras, access and gate control.

#### Field of applications

In most cases the key objective of integrating MaCCS is a combination of improving business processes, level of services and lowering cost. Having remote information real-time available supports the efficient and effective operational management. Examples of M2M are:

*Automatic signalling:* allows devices/equipment to signal detected problems immediately. If this situation is handled with a reactive response it will result in increasing the overall quality of service.

*Remote monitoring/control:* allows management of device/equipment with limited or no physical network access possibilities.

*Remote diagnostic/maintenance:* allows making adaptations on a device/equipment to increase efficiency and lower operational service cost. Predictive maintenance helps to increase the mean-time-between-failure (MTBF) and decrease the mean-time-to-repair (MTTR).

*Automatic data transfer/ Meter Reading (AMR):* allows data stored in a device/equipment to be sent wireless to a central location for data interpretation, increasing the availability of accurate data without influence of people and reducing the costs of physical wires.

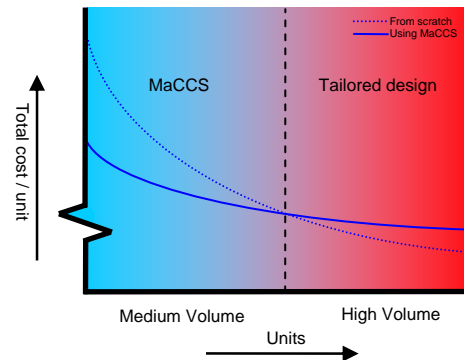
## Back-office

You will get more benefit out of your vertical solution when all remote information is online available. MaCCS can be easily configured and integrated in your application/back-office. MaCCS features transparent communication through USB, Ethernet, GSM/GRPS, digital and analogue IO, Bluetooth, WLAN, ZigBee and more.

## Our approach

Centric TSolve, as a leading product development company specialised in embedded solutions, developed MaCCS to serve as basis for customised solutions which results in a fast Time-To-Market.

## Volumes versus costs



This graph visualises initial engineering cost and cost per unit and shows when to choose for a new product design or MaCCS development. In both areas Centric TSolve can offer you a solution. In case of a mass-market Centric TSolve will create a design optimised for lowest product cost.

## When choosing the Centric TSolve MaCCS approach...

### ...you get a jumpstart in M2M.

Centric TSolve has invested in a well-engineered MaCCS which is robust, flexible, scalable, easy to extend and easy to adapt to any global application.

### ...you get a customised solution at a retail price.

The MaCCS can be tailored to your specific requirements with a minimal effort and cost, enabling a fast Time-To-Market.

### ...you get help with integration into your application.

Based on your requirements and interface definitions, we configure, integrate and test the MaCCS into your application back-office.

For technical information you can contact us via the contact information below.

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