



Shanghai General Motors Corporation Limited



SGM 自动化设备的应用与发展

SGM Automation System Application and Development



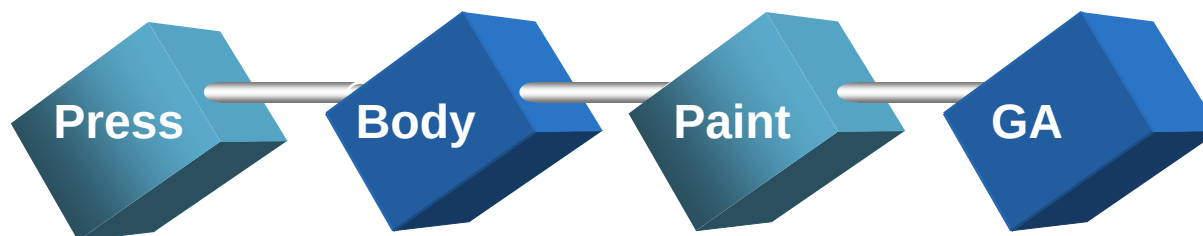
2012.11 Zheng Shaoyu





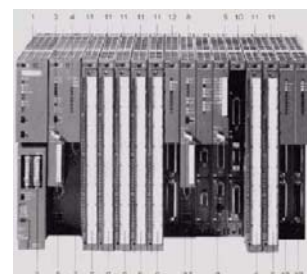
SGM 自动化架构概述

SGM Automation Architecture summary



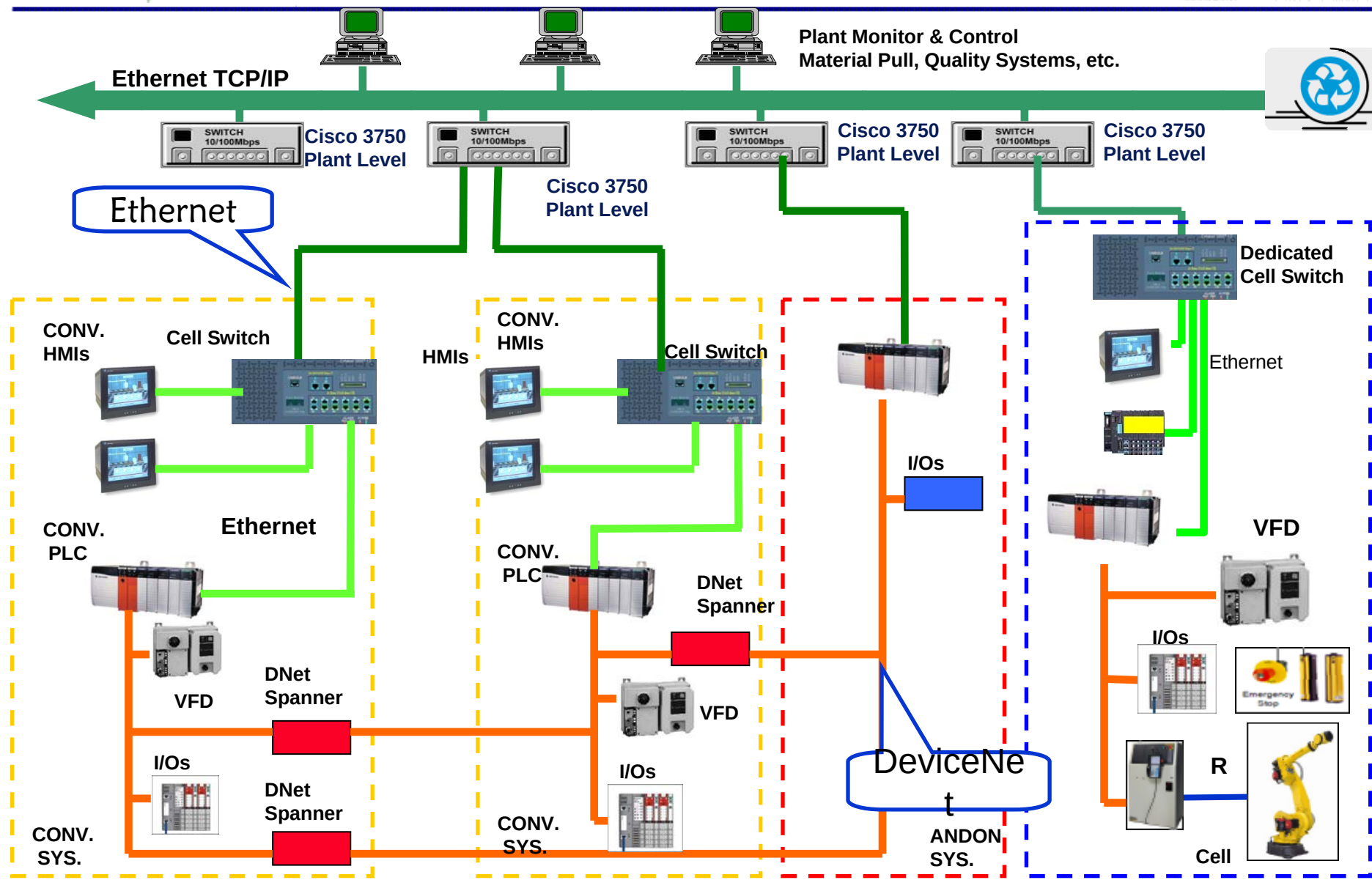
Automation System

- Body/GA ROCKWELL PLC + Devicenet fieldbus
- Press/Paint SIEMENS PLC + Profibus fieldbus





工厂网络架构 Plant Networks Architecture



Vehicle Manufacturing Engineering



自动化标准介绍

Automation Standard introduction

安全规范
Safety

全球健康及安全生产设计规范

Global Design for Health and Safety

流程
Procedure

SGM制造工程交付物流程

SGM VME Gate delivery Process

标准
Standard

硬件、软件、元器件标准等

Hardware, Software, Components etc.





自动化标准介绍

Automation Standard introduction



硬件
Hardware

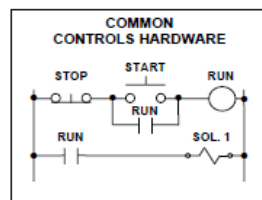
软件
Software

设备
Equipment



Controls, Conveyor, Robotics, & Welding

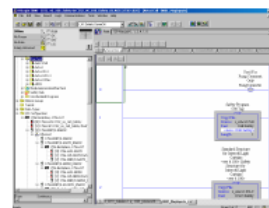
**Global Common
Controls Hardware Design Standards
GCCH-1**



Controls, Conveyor, Robotics, & Welding

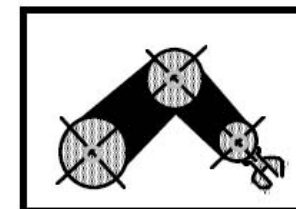
**Global Common
Controls Software Design Standards**

GCCS-1



General Motors Corporation
Manufacturing Assembly & Automation Center

**Global Common Technical
Specification for Production Robots
GRS-1**





典型自动化设备介绍及优势

Typical automation system introduction & advantage

各类应用 Application

点焊
Spot welding



弧焊
Arc welding



滚边
Roller Hemming



激光焊
Laser welding



铆接
TOX welding



涂胶
Sealing



螺柱焊
Stud welding



搬运
Handling



AntiChip Sealing



各类应用
Application

EMS



AGV



Glass Cell





新技术研究及发展

New technology study & development

1

高速安全 Rapid & Safe

全以太网应用，安全类产品的全面推广
Ethernet fieldbus with safety device application

2

高效节能 Energy conservation with high efficiency

节能产品、高效软硬件的使用
Energy conservation & high efficient software hardware
products application

3

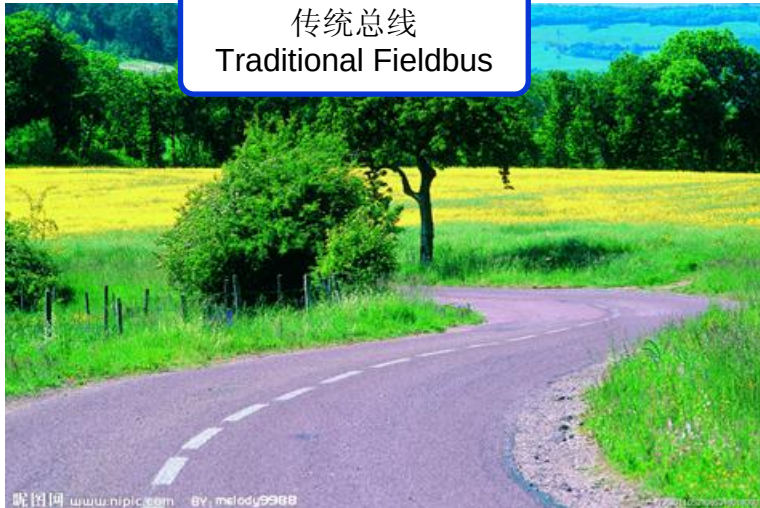
数字化 Digitalize

打造数字化工厂，数字化集成
Build digital factory and integration



高速安全 Rapid & Safe

传统总线
Traditional Fieldbus



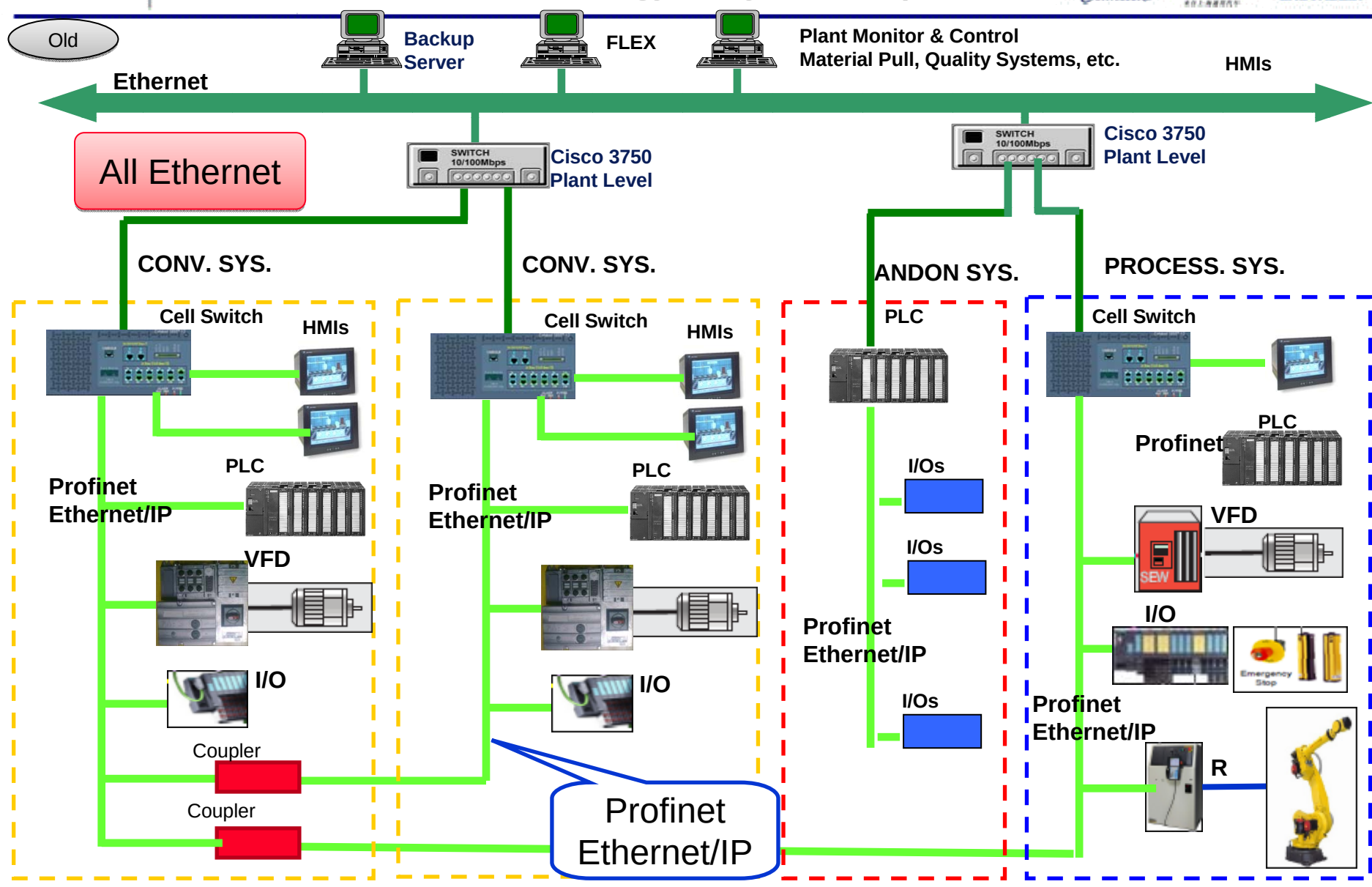
以太网总线
Ethernet Fieldbus



- 一网到底解决方案(EtherNet/IP, Profinet) All Ethernet solution
- 高网速，多功能，系统兼容的网络 High speed & compatibility with multifunction
- 遵循ODVA, PI组织的开放工业以太网标准 Follow ODVA, PI
- 支持TCP/IP和IT标准 Support TCP/IP and IT standard
- 实时工业以太网 Real time industrial Ethernet
- 无缝地集成现有的现场总线 Seamless integrate on site fieldbus



新技术研究及发展 New technology study & development



Vehicle Manufacturing Engineering



新技术研究及发展 New technology study & development



高效节能

Energy conservation with high efficiency



核心 Core

实现公司节能减排指标
Realize energy saving target

目标 Goal

降低原材料消耗，降低能源消耗，减少污染物的产生及排放，提高资源的利用效率
Decrease material, save energy, reduce pollution and emission, increase resource using rate

方法 Method

分析工艺流程，改进生产方式，开发、导入新材料、新设备、新工艺
Analyze process flow, improve product, create and import new material, equipment and process

节能减排目标
Energy saving
Target

- ◆ 更低的能源消耗
Lower energy
- ◆ 更少的废物排放
Lower emission
- ◆ 更少的资源利用
Lower resource

高效节能

Energy conservation with high efficiency

新技术 New Tech



灯泵浦的激光发生器电光转换率仅为3.4%
Emitter Pump Diodes convert efficiency is only
3.4%

光纤激光焊

Fiber laser welding

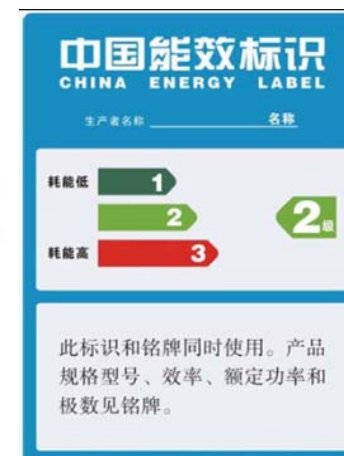


光纤式激光发生器的转换效率可达25%
Fiber Emitter convert efficiency would reach 25%

新标准 New Standard

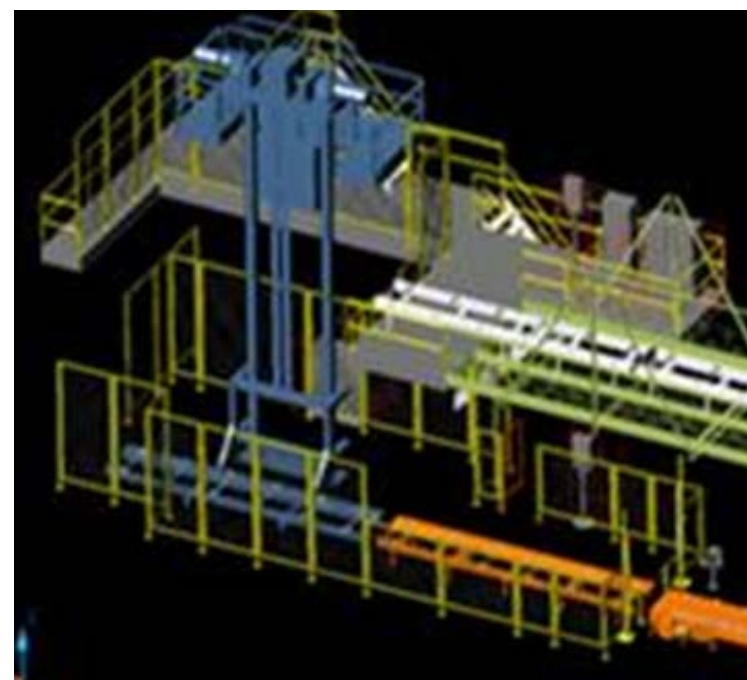
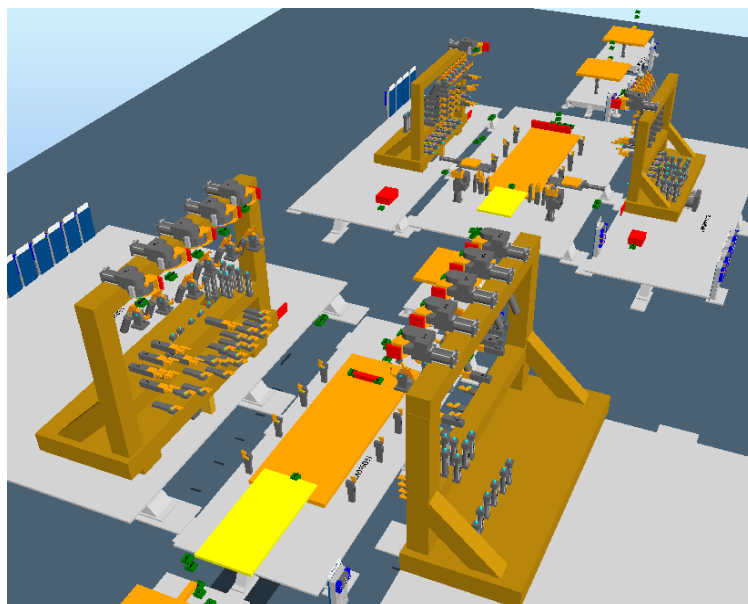
根据新国标GB18613 在新项目中直接采用新能效标准的电机

According to new GB18613, apply new energy standard motors in new project

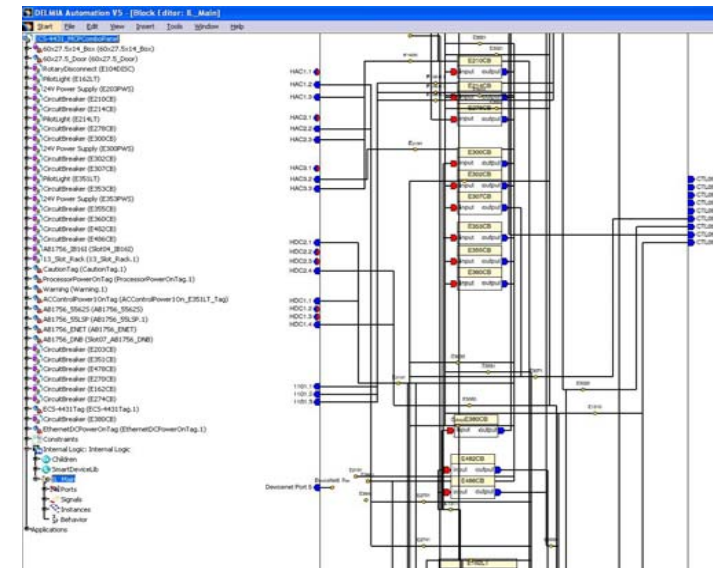
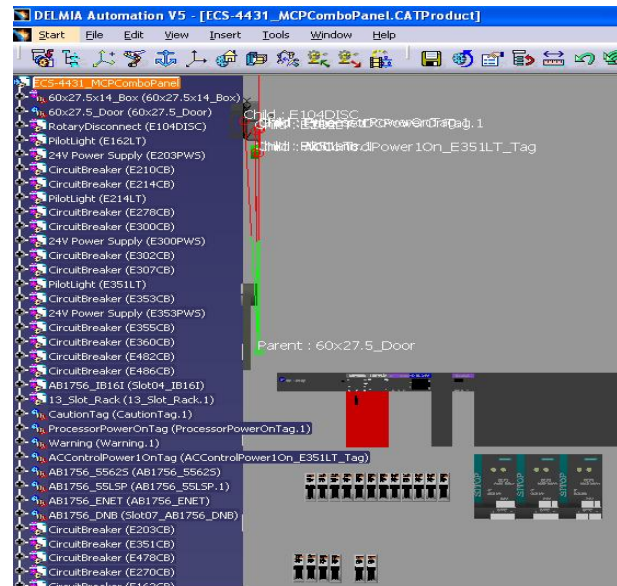


数字化 Digitalize

数字化工厂 Factory CAD



数字化集成
Emulation





Digital Plant Video Demo





谢谢
Thanks



COMBO Cabinet:
ECS4233 (1756-L61S+
Partner+3DNET Scanner)

Gate-Box:
ECS4010

J-Box:
ECS-4125

Armstart
280D:

HMI Panel:
ECS4023

RUNBAR:
ECS4050



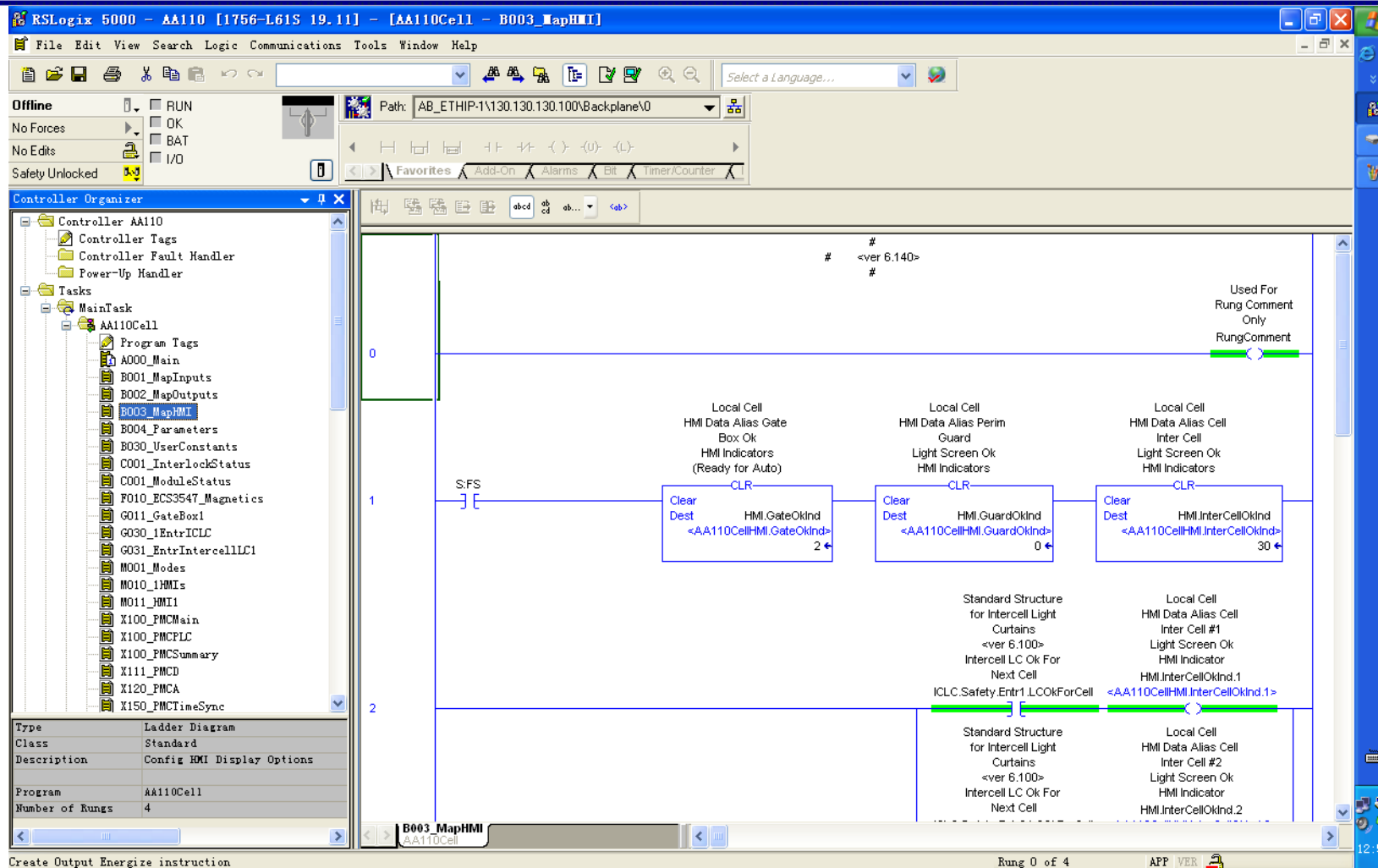
硬件
Hardware





自动化标准介绍和应用

Automation Standard introduction & application



软件
Software



Vehicle Manufacturing Engineering

设备 Equipment



Options:
User Operator Panel
CRT/KB
Remote I/O Interfaces
Extended Axes
Controller Backplane

