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Production Sites Charon Application

Milan, 15th of March, 2011



Fiat Auto SpA

(From 31 Dec 2010 Financial report)



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- Turnover (Mn €): 27.860
- Loss/Profit (Mn €): 607
- Vehicles Annual Production 2.081.000
- R&D Expenses (Mn €): 722
- Employees : 57600



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Fiat FGA Production Sites

- Production Sites
 - } Torino Mirafiori
 - } Cassino
 - } Pomigliano D'Arco . Napoli
 - } Melfi
 - } Termini Imerese
 - } Sevel Val di Sangro
 - } FIASA Betim Minas Gerais – Brasil
 - } Cordoba Argentina
 - } Tychy – Poand
 - } Tofas Bursa Turkey)
 - } FIAL Ranjangaon (Pune – India)

Planned New Plant

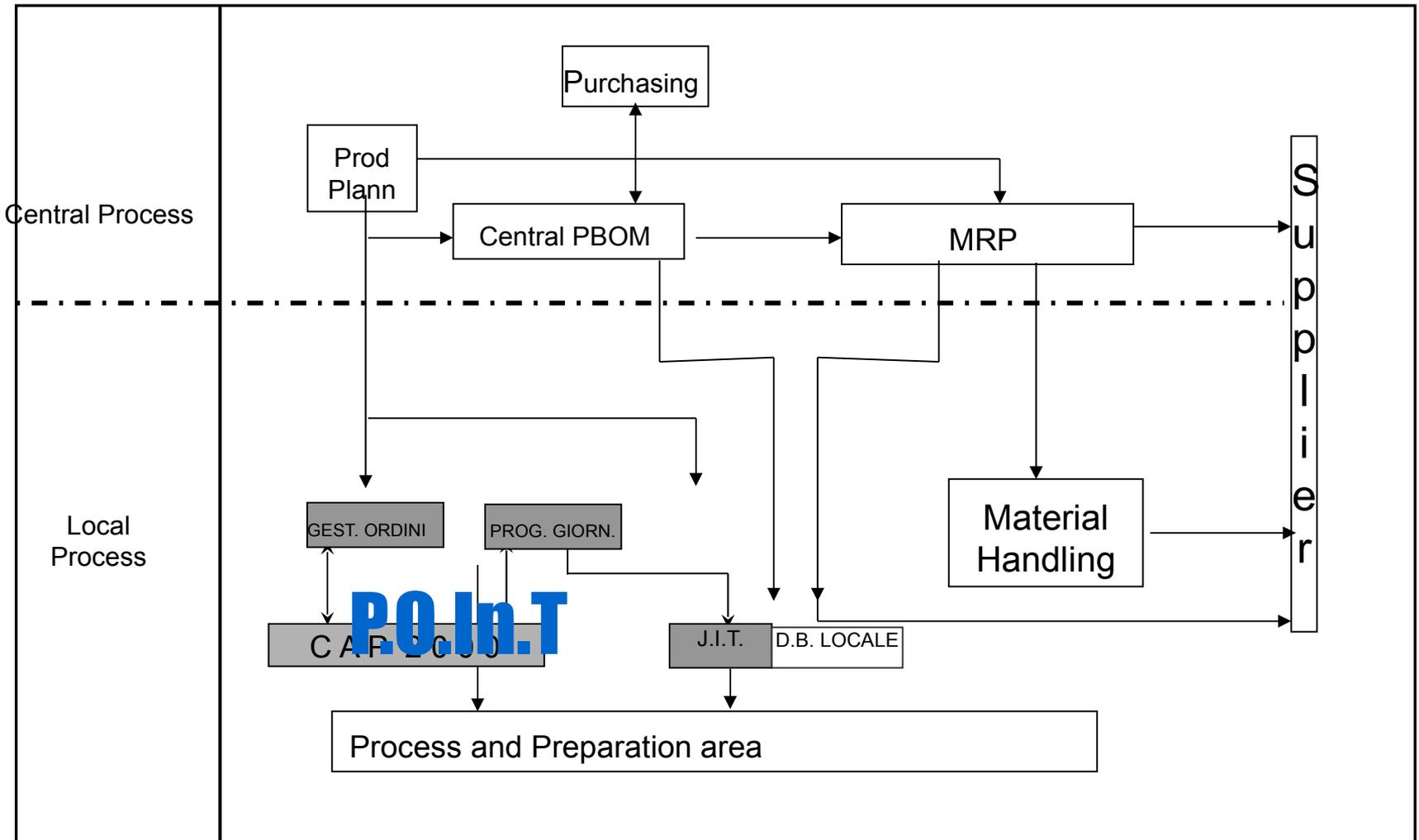
- Serbia for L0 product Line
- Reviewing Pomigliano D'arco Plant for New Panda Model
- Renewing Mirafiori Plant to produce Chrysler and Jeep model



FIAT Production Applications

- The Fiat FGA Application, developed by Fiat Auto late in the year '80, on VAX/VMS Platform, are a set of applications to control and manage the Plant Activities.
 - The Main topics are:
 - Order Management, Production Planning on the assembly Line, Order sequencing, Assembly line Material Planning, Monitoring
 - In Each Plant are managed 4-500 interactive User, and 3-400 Printer distributed on the assembly Line
 - Manage the JIT Material demand, following the weekly production planning
 - The Applications Set are known's as the MES (Manufacturing Applications System)
 - Applications set are based on VAX/VMS ACMS , TP monitor, Procedure written in Cobol, Fortran nad PL/1, user interface are based on CRT monitor (VT200).
 - The System Architecture was designed to operate 24x7, based on VAX/VMS Cluster.
 - In each Plant was installed 3-4 Vax/Vms Node Cluster , and a shared storage (HSC, Raxx disk)
 - Over year, the applications was moved from VAX/VMS to Alpha VMS
 - Are started the program to Move on Charon, using a Industry Standard System based on a esacore Intel CPU.

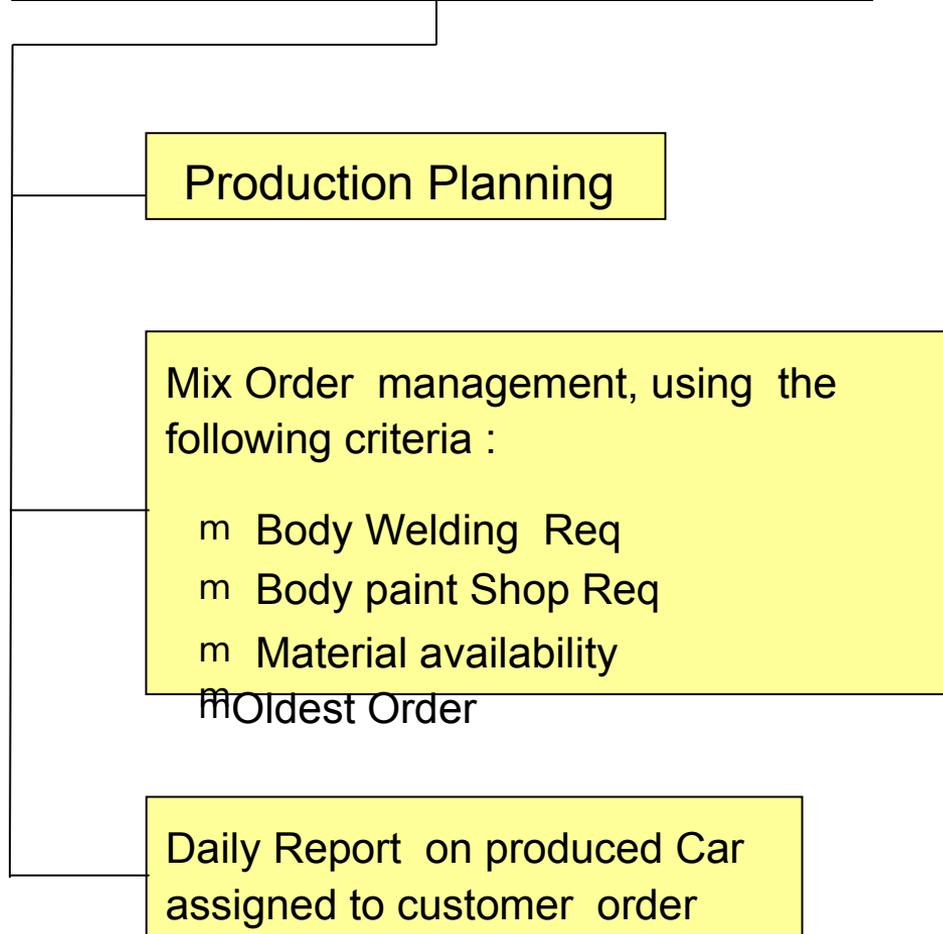
General Layout of Automotive Assembly Plant



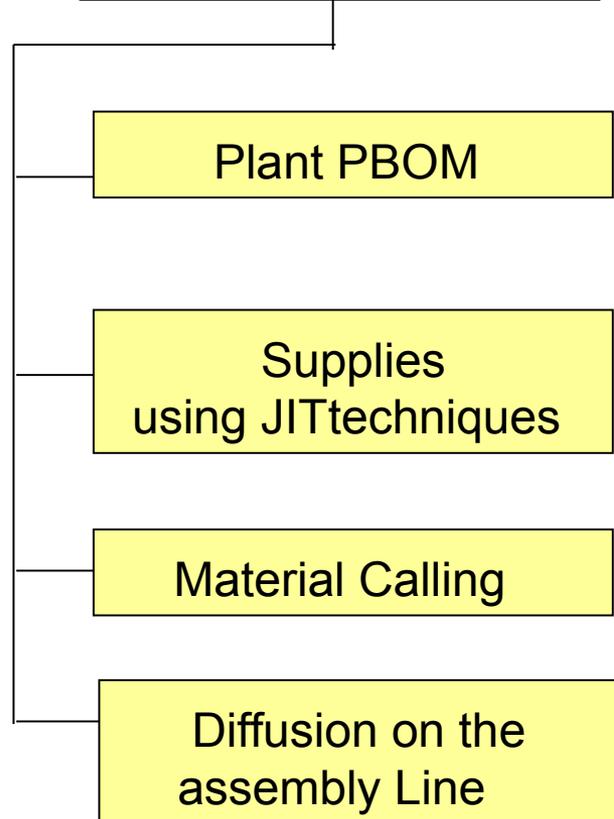


Logistic process managed by Point/JIT apps

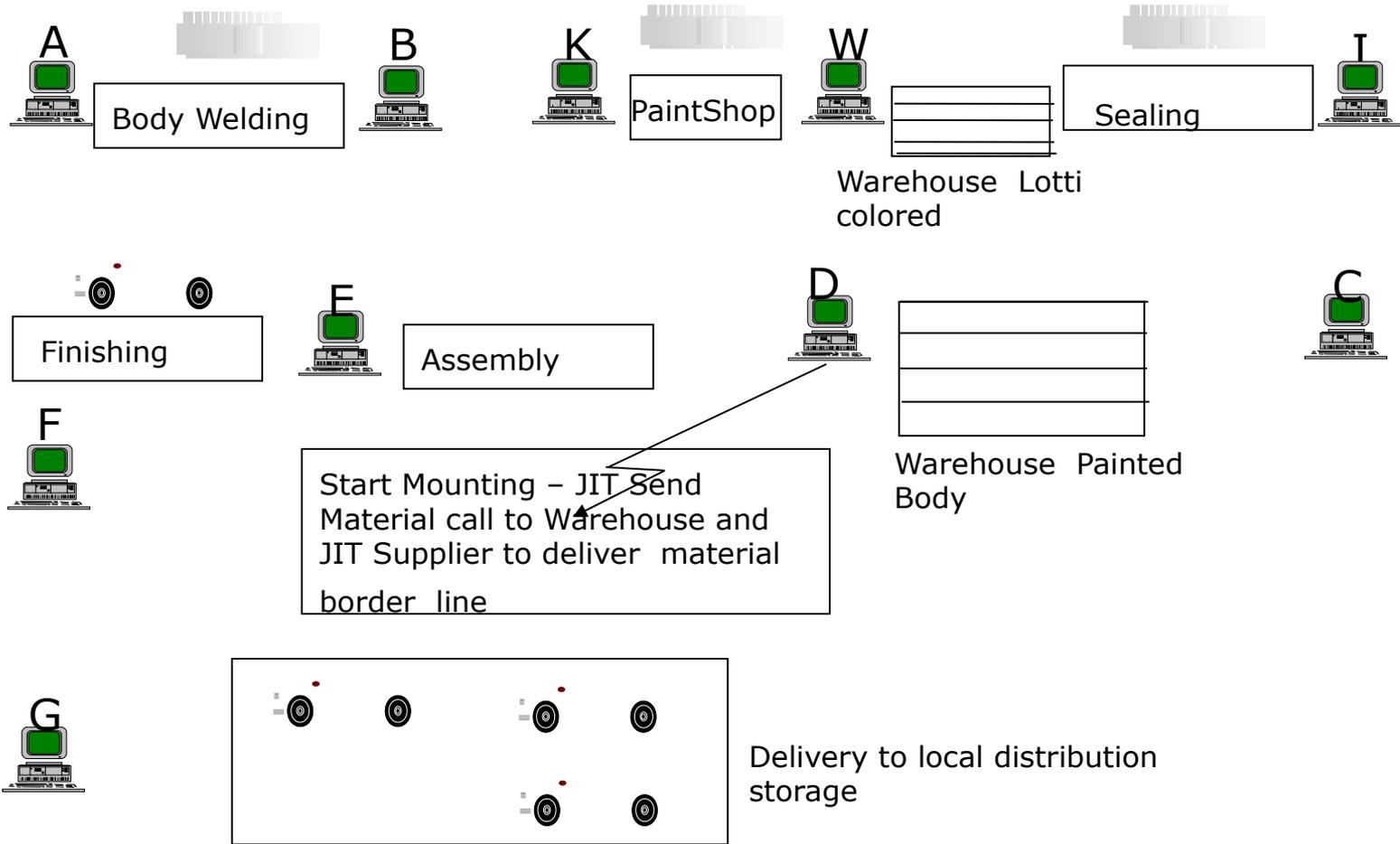
POINT Apps Set



JIT Apps Set



Control Flow Station Layout for "Base plant Model"



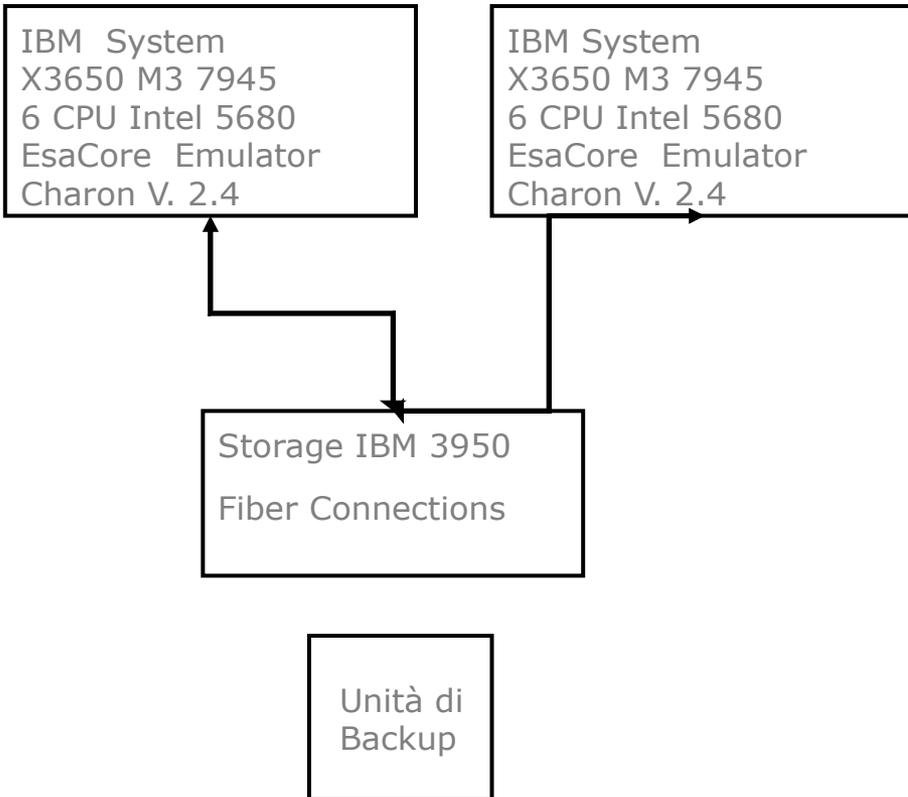


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Site where Charon is Installed in FIAT FGA

- Charon solution installed Fiat FGA Production Plant in the following sites:
 - Torino Mirafiori Area
 - 1 Vax XM Plus (Proptotyping New Sigma Apps)
 - TYCHY Fiat Poland
 - 2 Charon AXP-DS20 systems in Cluster, running JIT/Point Applications, to control assembly Line where are assembled 3 Car Model: FIAT PANDA, Fiat 500, and Ford new KA.. Annual Production about 500.000 car.
 - 1 VAX XM Plus Systems run File Exchange with Central Sites

IBM INTEL system Installed at Ticky Plant



The Tychy configuration was supplied, installed and configured by IBM to the FGA TYCHY Plant in Poland, in substitution of previous configuration of Alphaserver DS25 systems.

The configuration is:

2 sistemi INTEL based, each have 2 CPU XEON 5680 esa core with 6 CPU's, and 12GB of Memory.

- Interface with 2 Fiber connections to the IBM Storage model 3950.
- SW Charon to emulate Alpha server Charon-AXP ES40 with 3 virtual CPU Version 2.4,

Development System installed to Solveit site.

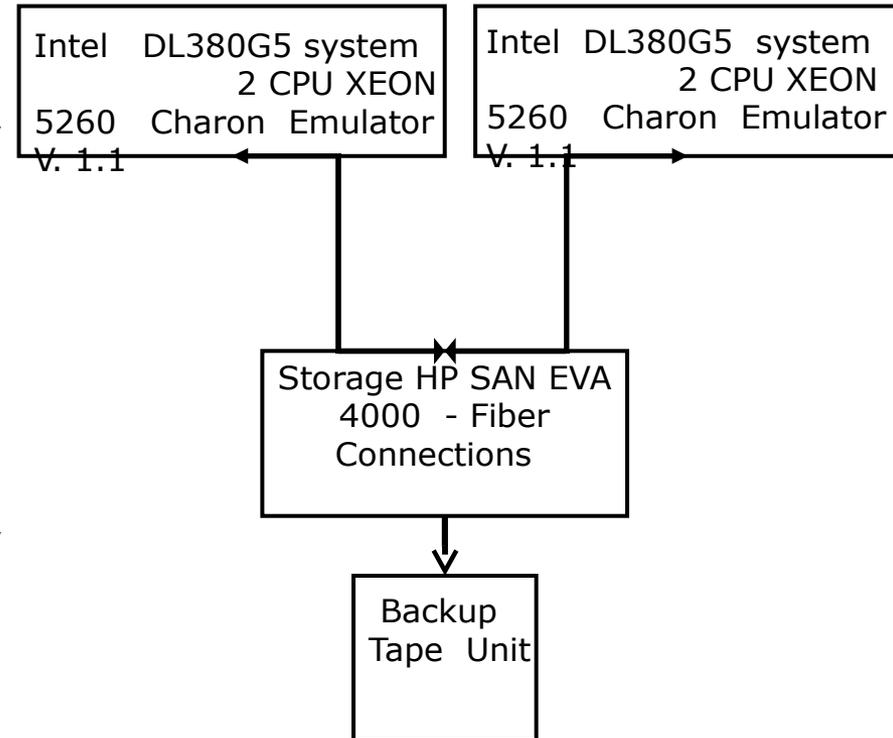
Development and testin system are installed to Solveit sites

The system configuration for POINT/JIT MES Apps:

- 2 HP-DL380G5 Systems, 2 CPU, configured in Cluster,
- 2 Fiber Channel dual Channel
- SAN EVA 4000,
- Backup Legato,
- Charon License AXP DS20 2 CPU

SILAM Apps

- 1 HP-DL380G5 Systems, 2 CPU, configured in Cluster,
- 1 Fiber Channel dual Channel
- SAN EVA 4000,
- Charon License VAX Charon-XM





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Updated Pomigliano D'Arco Plant

The Pomigliano Plant is under modification to be able to produce new Panda

The plant will start in Production late in 2011

Proposed System Configuration

- 2 x HP-DL380 with 2 esacore CPU @ 3.33Ghz,
- 4 CPU each
- Fiber Channel interface dual channel
- Storage HP - SAN EVA 6400
- Backup Solution based on Legato Networker
- License Charon AXP ES40 with 3 CPU Virtual, (Possible Expansion to AXP GS80 with 8 CPU)



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Planned Update for Mirafiori and new Plant in Serbia

The Mirafiori Plant will be reviewed to build multimodel car, based on Fiat and Chrysler Platform.

The Plant modification will start late in 2011

- From the Information Systems point of view, Fiat have started to evaluate new MES solution to control Plants activities.
- Possible Choice is Solution from Siemens MES. Gap Analysis is on going.
- Review and update existing MES applications, move to a new hw and sw Platform
- Other Market Solutions