

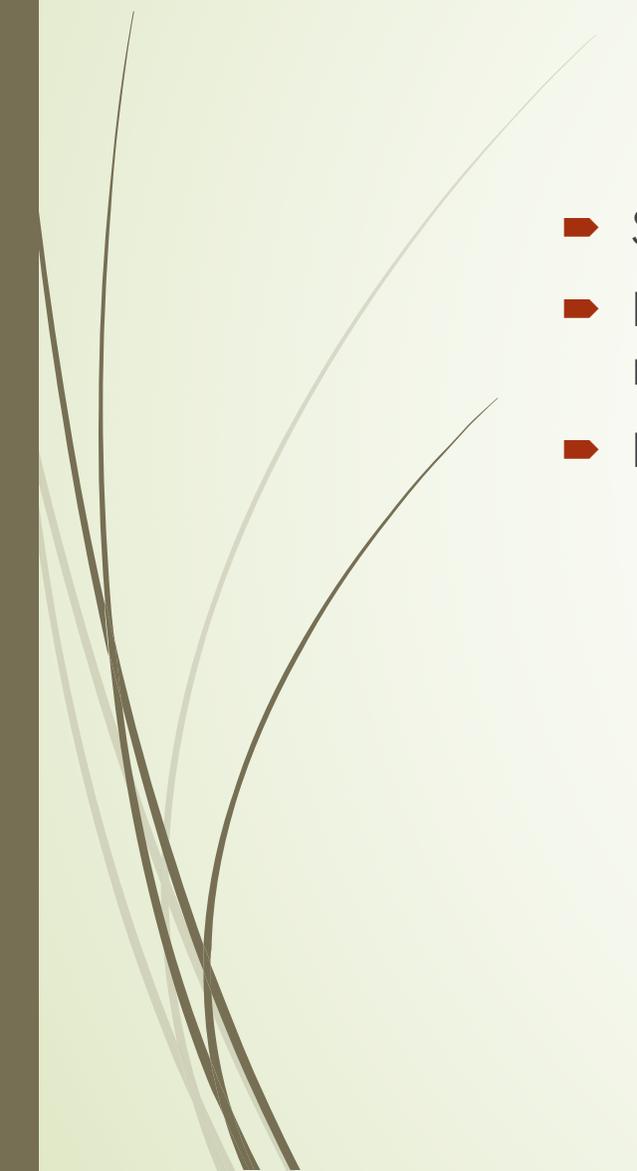


SCADA system in the industry, Benefits and future trends

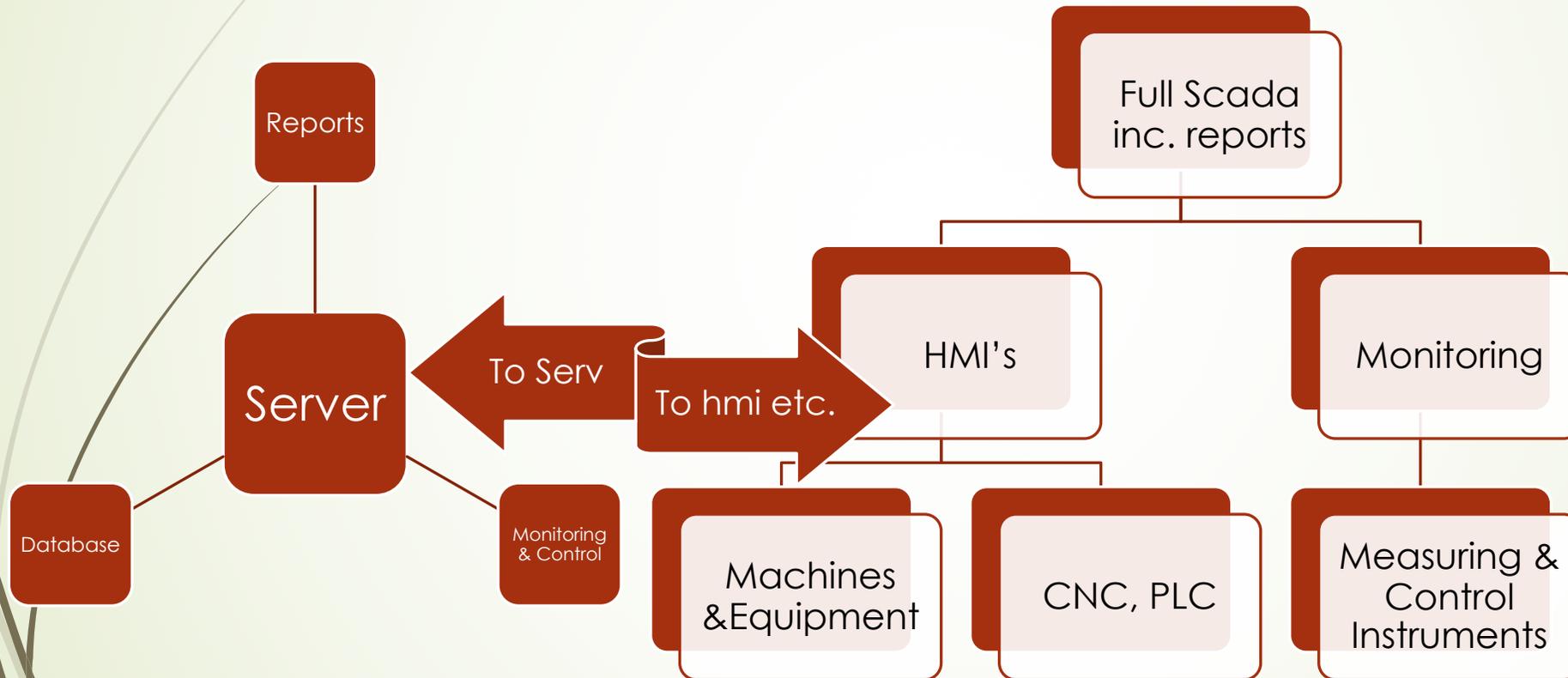
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SCADA, WHAT IS IT?

- SCADA stands for: Supervisory Control And Data Acquisition.
 - It is a computer based system used to acquire real time data from plant machinery and equipment for effective control and monitoring
 - It is also capable of keeping lots of historical information for further analysis.
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Layout of a typical SCADA System





Benefits of SCADA in the industry

- There is a wide range of benefits of SCADA to industries. Ranging from the operator level through maintenance, engineering, management and even top management & Executives.
- Operator: On the operator side, it provide visualization of the equipment they are operating as well as quick real-time information about the production and quality.
- Maintenance: On the maintenance level, it provides data for easy diagnostics as well as real-time diagnostic data from connected machines and devices.



Benefits of SCADA in the industry

- Engineering: On the Engineering level, it provides the real-time data as well as historical data needed to analyze both equipment and production product to better understand the dynamics of specification variation and variables that could be causing those variations. All these information could be used to optimize processes, machines and end products.
 - Management: On the management level, vital production KPIs are made available in quasi real-time and various reports are also possible with just a click or two. All the other information on the SCADA system are still available for further follow up on the lower levels if and when required.
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Benefits of SCADA in the industry

- Top Management: On the top management level, vital production KPIs and performance comparisons for different sections of the facilities are made available in quasi real-time and all the other information on the SCADA system is still available for further follow up on the lower levels if and when required.
- Executive: On this level, Precise information from different branches that helps make effective decisions are presented however if needed will be able to drill down to the machine level to understand the situation at hand on floor level and this can be done even from another country.



Future Trends of SCADA in the industry

- **IoT- Internet of Things**
 - **Industrial 4.0**
 - **Smart Factory**
 - **AI**
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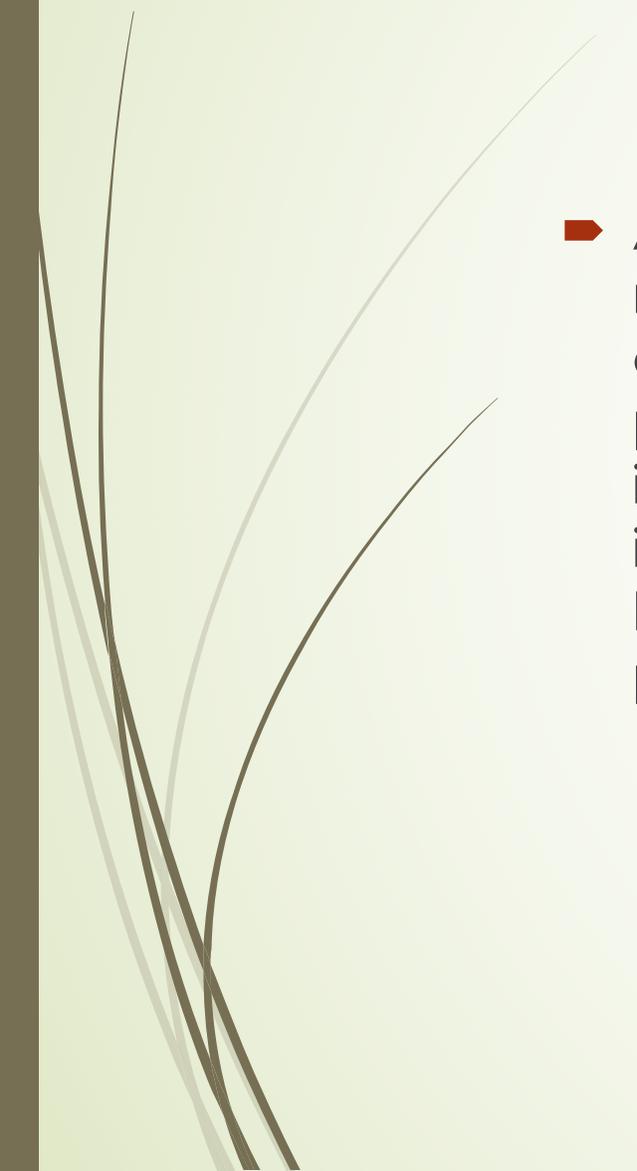


Future Trends of SCADA in the industry

- ▶ IoT: Internet of things is a new technological shift where every device or equipment from general domestic level to industrial level are expected to be able to communicate to the internet directly.
- ▶ Industrial 4.0: Technological shift requiring Devices and equipment in the industry to have some intelligence to communicate into up-level systems through a network.
- ▶ Smart Factory: Next level of industrial 4.0 where in addition to the devices communicating to and upper level systems are able to receive instructions or commands to perform specific task differently.(eg Model Change Over)



Future Trends of SCADA in the industry

- ▶ AI: Artificial Intelligence, becoming very famous in recent years with new advancements and faster computing systems. AI is been and is continually becoming part of our daily life. AI is a piece of software programed in a certain way so that it can exhibit some form of intelligence and learning capability. Its been used successfully in the internet to suggest things that might interest you by learning your browsing habits. Among other devices and areas, they are also popular in our phones and cameras.
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Future Trends of SCADA in the industry

- **AI in SCADA is not far fetched and will be seen within the next five years.**
- **Benefits of AI in SCADA:**
 - We mentioned earlier that many devices will be pushing data onto upper level systems-SCADA.
 - With so much information, it becomes difficult for a person to analyze all these data which is logged from each device at about three (3) to five (5) times in a second.(a small machine may have an average of 200 devices. So 600 data in every second and over 2 million data in every hour)
 - AI can be used to analyze these data and only give you the vital ones and can even suggest or highlight areas of concern based on the data.



Future Trends of SCADA in the industry

➤ **ARE OUR JOBS SAFE?**

- **With all these technological advances coupled with AI may cause people to ask the above question.**
- There are many points of view to answer.
- First, let look at when the computer was introduced.
- Then lets look at when the mobile phone was introduced -what happened to the manual operators?



Future Trends of SCADA in the industry

➤ ARE OUR JOBS SAFE?

- With all these technological advances coupled with AI may cause people to ask the above question.
- With the examples we have seen, we can easily say **OUR JOBS ARE SAFE.**
- It is evident that the data is going to increase astronomically so if AI helps to bring the quantity down, we still will need those who were analyzing to the decision level to still continue to use the summarised data and suggesting's from the system and AI to do a realistic reasoning and make humanly decisions.



Future Trends of SCADA in the industry

➤ **ARE OUR JOBS SAFE?**

- **With all these technological advances coupled with AI may cause people to ask the above question.**
- We may need more people or increase employment as more data from devices may require more people at least to support the IT systems and the SCADA system.
- Also new SCADA Systems are going to be implemented at factories which previously did not have SCADA. This could lead to more employment opportunity.



Conclusion

➤ ARE OUR JOBS SAFE?

- **With all these technological advances coupled with AI may cause people to ask the above question.**
- We can therefore conclude that, mostly people may not lose their Jobs but may have to modify the way their jobs were done in the past to accommodate the technological shift.
- The only foreseeable instance of Job lost will be in a case where the AIs become so advanced that they are able to make realistic humanly decisions and also implement them. Even in such scenarios, more people will be required to program the AIs and maintain them so it is not a straight Job lost case.



➤ **THANK YOU!**

➤ **QUESTIONS ?**



END.

➔ **THE END OF THE BEGINNING**

➔ **BUT THE BEGINNING OF THE
FUTURE**

