

BEYOND

SMART CITIES

CERTIFIED BUILDING COMMISSIONING

PROFESSIONAL - CBCP EXAM PREP

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COMMISSIONING SPECIALIST CURRICULUM

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GREEN BUILDING

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SMART COMMISSIONING

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LEARNING OBJECTIVES

Smart Commissioning

Planning for Smart Commissioning

Core concepts

Traditional Commissioning vs smart Commissioning

Conclusion

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SMART COMMISSIONING

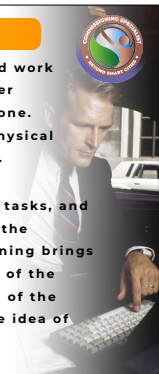
Smart commissioning is a way to speed up the process of commissioning field instrumentation that is connected to a DeltaVTM Distributed Control System (DCS) or Safety Instrumented System (SIS). This is done with the help of technology. It makes commissioning HART devices much easier and faster by automating most of the tasks that need to be done. The benefits of smart commissioning extend beyond the site work; they change the way automation projects are executed.

An automated whole building diagnostics tool is a software program that takes a top-down approach to diagnostics to detect excess energy consumption of the whole building and its major systems...

SMART COMMISSIONING

Smart Commissioning not only cuts down on the time and work needed to set up field devices, but it also works with other DeltaV features to change how automation projects are done. Electronic marshalling enables fully decoupling the I/O physical design from the software design (e.g., control strategies).

Figure 2 shows that engineering tasks, field installation tasks, and buying field devices can be done at the same time. Once the engineering phase has been completed, smart commissioning brings software and hardware together during the on-site phase of the project. In the sections that follow, we'll talk about some of the benefits of electronic marshalling and how it fits into the idea of "late binding."

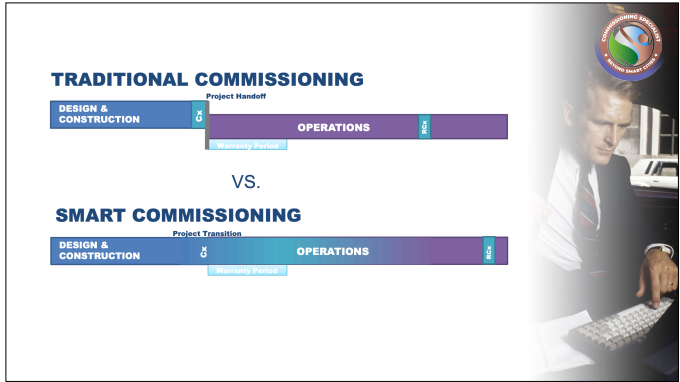


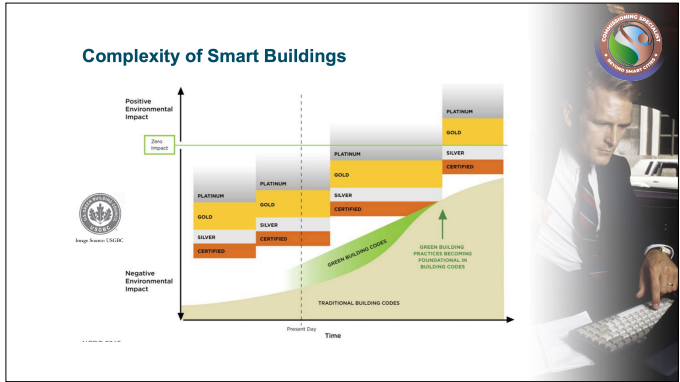
CORE CONCEPT

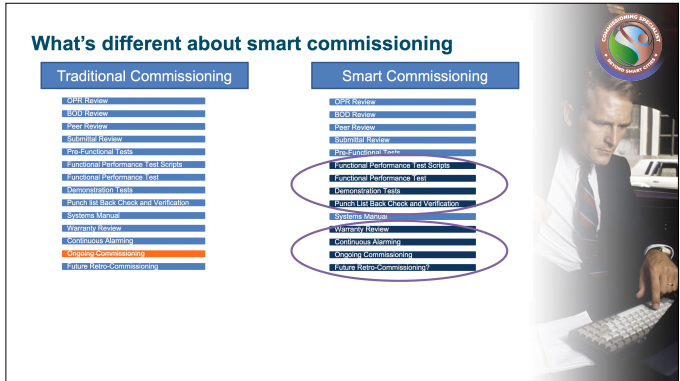
One of the major obstacles to the development of individual budgets has been the assumption that many public services need to be commissioned on behalf of local people. Moreover, it is certainly the case that some public services (e.g., emergency ambulance services) are much more efficiently and effectively organized in this way. However, this does not mean that it makes sense to publish all public services as if they were emergency ambulance services. Smart Commissioning was a model developed by Simon Duffy to help local commissioners reconceptualize their role around the enablement of effective purchasing of public services by local people themselves.

Smart commissioning involves exploring where commissioning decisions can be delegated to citizens and where they are best left at a strategic level.

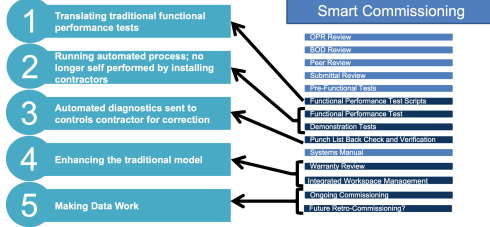








Smart Commissioning



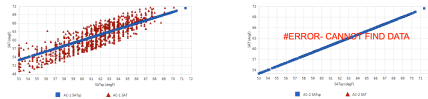
1 Translating traditional functional performance tests



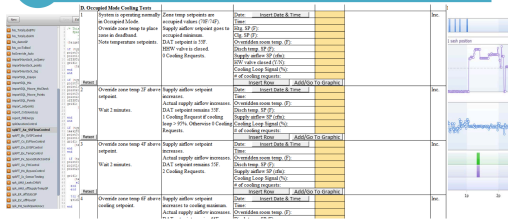
1 Translating traditional functional performance tests

Automated Cx requires all the points to be named consistently or *tagged* with a searchable convention

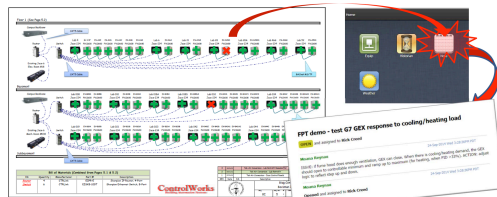
Building-NN-AHU-X-FLOOR-##VAV-Y-DAT(F) OR Building-NN-AHU-X-FLOOR-##VAV-Z-Supply Air Temp(F)



2 Running automated process



3 Automated diagnostics sent to controls contractor for correction



4 Enhancing the traditional model

In the hand-off to warranty, **No complaints** does not mean the system is optimized.

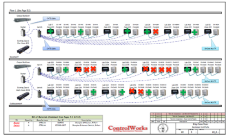
This approach will find system inefficiency where others will find the job working...

Through *continuous testing* during the warranty period.

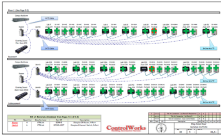


5 Making Data Work

Traditional Cx



Smart Cx



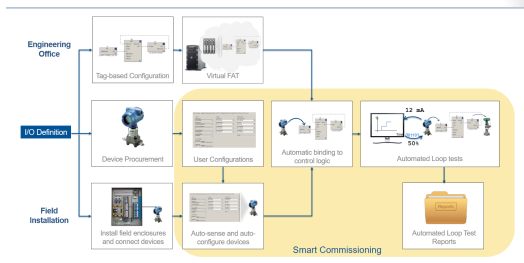
If it's "too hot" it is too late!



What we learned

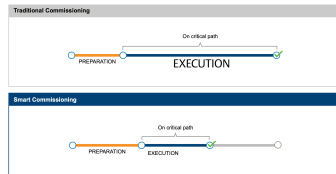
- Define the use of automated Cx in project specifications
- Deep coordination needed with controls vendors
- Automated Cx exposes the "copy/paste" nature of controls programming - just "making it work" is not possible with this model
- The process needs to be commissioned...

SMART COMMISSIONING



PLANNING FOR SMART COMMISSIONING

Traditionally, device commissioning is mainly considered field work, and not much preparation is involved. Most commissioning tasks are left to the on-site phase, and any unexpected delay has a significant impact on the critical path of the project.



The Smart Commissioning method either gets rid of or automates tasks that need to be done on-site. This is done by making a clear execution plan and using the Smart Commissioning tools to back it up. While the preparation effort increases, this effectively removes work from the critical path. The result is a shorter and more efficient execution phase that leads to a shorter overall process.



There will continue to be a strategic commissioning role which will have the following elements:

- Community capacity - identifying strategies for promoting increasingly effective citizen and community action for meeting or preventing needs
- Market development - promoting increased market entry, innovation and communication within emerging markets
- Quality improvement - facilitating systems to improve accountability and communication to drive up standards

CONCLUSION

Smart Commissioning — a technology-enabled process — streamlines the full commissioning process including system design, device binding and configuration, testing, and documentation.

Positively impacting the overall certainty of project execution, Smart Commissioning helps automation projects meet strict and shifting deadlines. The basis of the process relies heavily on automating manual tasks and letting the technology do its work.

By adopting an agile approach to commissioning and startup, plant owners can not only significantly reduce the risk of project overruns, but also increase safety by reducing the amount of non-routine work in the field. And that while reducing alarm overflows.