

IST-203 Hot Cutover Tool

Product presentation

DCS Migration

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The concept of the Hot Cutover Tool

Technical background

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DCS Migration

Defining the problem

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DCS Migration

Introduction



For who?

- | Process plants

Why?

Many DCSs in process plants are approaching the end of their useful life:

- | Obsolete by OEM

- | Lack of production data

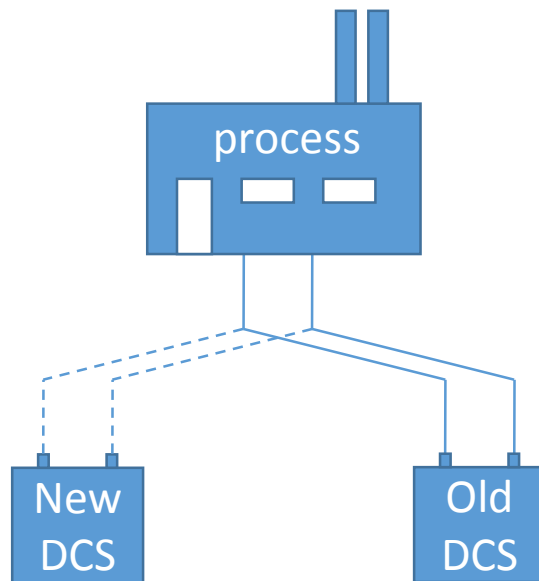
- | Limited network and/or expansion options

- | Technical end of life

- | Lack of flexibility and production efficiency

DCS Migration

Defining the problem



The DCS (Distributed Control System) is the heart of the process, without DCS the plant will not operate or produce..

.. but it needs to be disconnected to migrate it.

Migrating from an old DCS to a new DCS requires:

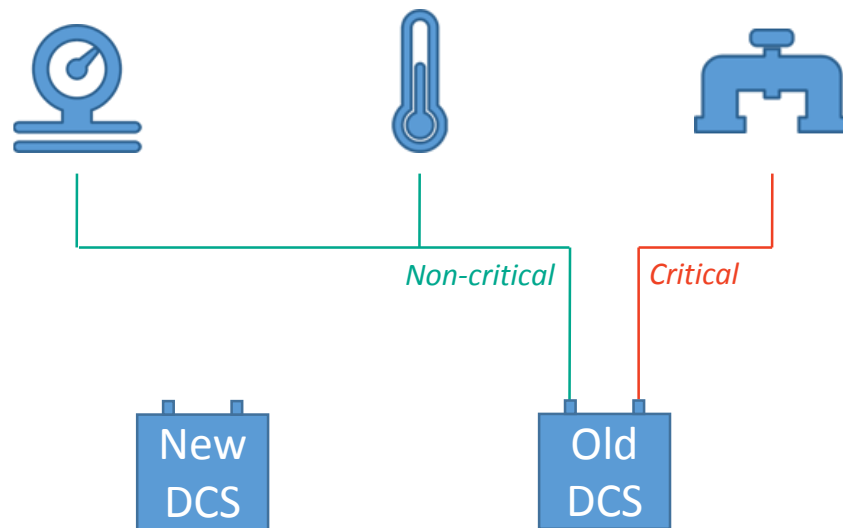
- | Disconnecting the old control system
- | Connecting the new control system
- | Setting and checking the new control system

Bypassing the:

Engineering, purchasing, certification, programming, scope of the migration

DCS Migration

Defining the problem



There are two ways to migrate the critical loops:

- | Hot cutover - *The migration takes place during active process conditions*
- | Cold cutover - *The migration takes place during a stop*

| Typical connection of instruments to a DCS is based on 4-20 mA loops

| Many control loops and measurements can be migrated without any risk, by simulating or bypassing. These are regarded as non-critical

| Some control processes need to be taken over temporarily while disconnecting the old DCS and connecting the new DCS. These are regarded as critical

DCS Migration

Market needs

For a hot cutover migration, plant managers are looking for:

| Safety

Control of the process, available fail-safe and step-back options and a guided process to maximize the migration safety

| Efficiency

Quick and easy process, limited preparation time and no downtime to boost the migration efficiency

| One solution

To improve efficiency and reliability, one solid solution for all critical loops is the best way

| Clear and structured process

Keep the process clear and structured to eliminate human failure

DCS Migration

Hot cutover strategies

There are various hot cutover strategies, including:

| Process bypassing

- Using the process redundancy and bypass valving to block out segments
- *Not always possible, no control during migration, no output match, time consuming*

| Manual valve control

- Using bypass valving to create fixed process conditions
- *Offset control only by experience, no output match, time consuming and expensive*

| Mechanical blocking

- Use of machined adapters to mechanically fix process valves
- *No offset control, no output match, time consuming and expensive*

| HART manual mode

- Using HART to create a stand-alone instrument
- *HART manual mode support required, not always possible, external power required*

| Electrical loop take-over

- Using the IST-203 Hot Cutover Tool to take over and control the loop
- + *Increased safety: offset control, fail-safe mode, output match, software guided process*
- + *Increased efficiency: easy and quick process, no mechanical work, less preparation time*

DCS Migration

The solution

The IST-203 Hot Cutover Tool fulfills the market needs for hot cutover DCS migrations. It is designed to make hot cutover migrations safer, more efficient and better structured.

IST-203 Hot Cutover Tool

The concept

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Hot Cutover Tool

The concept

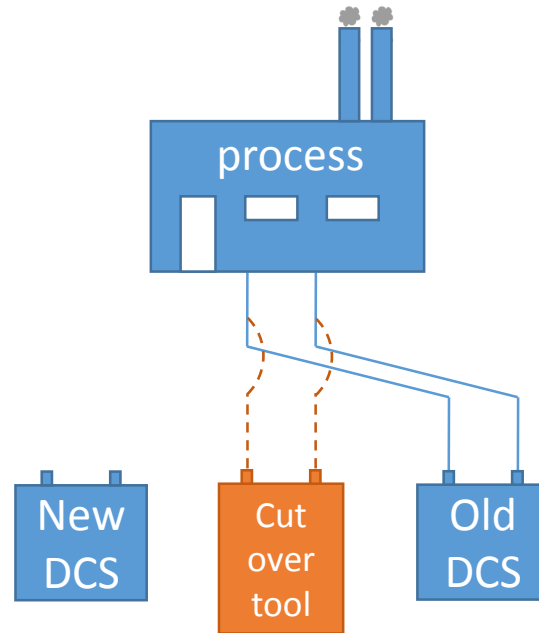
The IST-203 Hot Cutover Tool takes over and simulates 0(4)-20 mA loops during active process conditions. This allows the user to perform a hot cutover during a PLC or DCS migration without influencing the process, while increasing efficiency and control. The hot cutover tool guides the technician in 5 steps through the hot cutover process, minimizing human errors and risks.



Hot Cutover Tool

Step-by-step

Step 1: Connect the tool to the loop



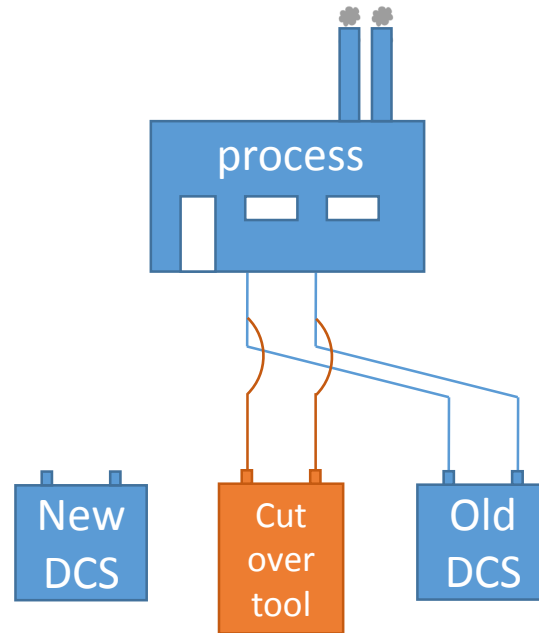
1. Connect the tool
2. Measure and sample
3. Loop take-over
4. Match output
5. End take-over

The process starts with an inventory of all processes and related instruments that will be affected by the DCS migration. Define the critical loops and perform the necessary hazard and operability studies. Connect the device to the loop in parallel with the DCS.

Hot Cutover Tool

Step-by-step

Step 2: Sample mode



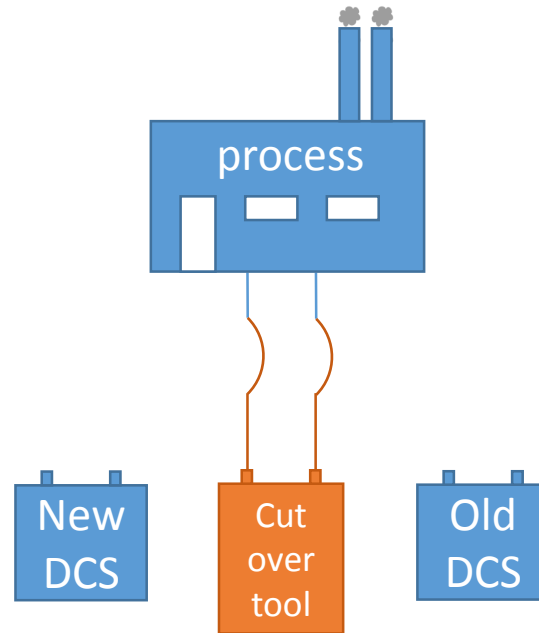
1. Connect the tool
2. Measure and sample
3. Loop take-over
4. Match output
5. End take-over

When migration is selected in the main menu of the device, it will switch to sample mode. In this stage, the hot cutover tool verifies if it is connected to an active loop and receives a stable signal.

Hot Cutover Tool

Step-by-step

Step 3: Loop take-over



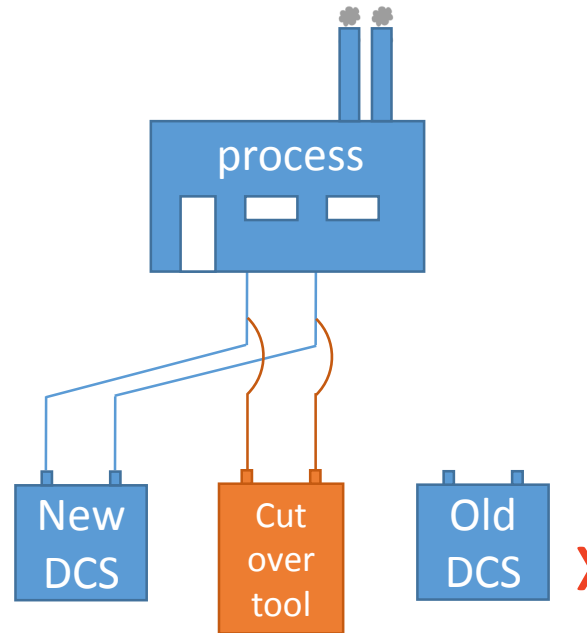
In loop take-over, the tool has taken over the control loop. Any changes made to the DCS after entering take-over mode will have no effect on the loop. The old DCS can be disconnected and the new system can be connected.

1. Connect the tool
2. Measure and sample
3. Loop take-over
4. Match output
5. End take-over

Hot Cutover Tool

Step-by-step

Step 4: Match output



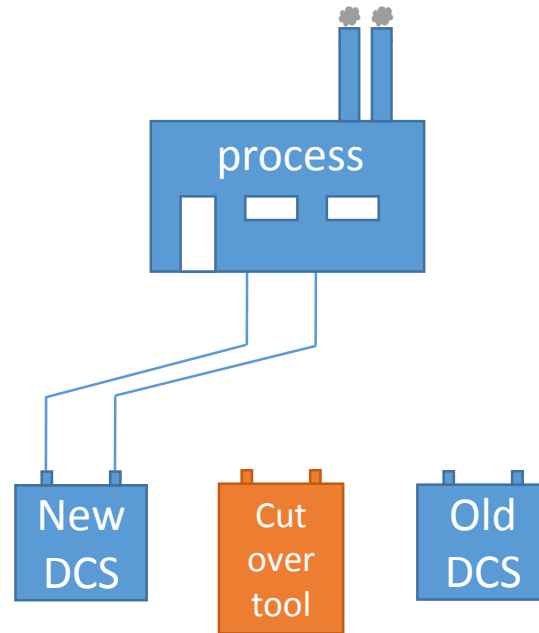
To avoid any offset in the loop when ending take-over mode, the new DCS should be set to the same value as the old DCS. The new DCS output can be changed until it matches the old DCS output – the tool will absorb any offset generated.

1. Connect the tool
2. Measure and sample
3. Loop take-over
4. Match output
5. End take-over

Hot Cutover Tool

Step-by-step

Step 5: End take-over



When the new DCS is connected, working properly and the output matches, take-over mode can be ended. At that point, the new DCS will take control of the loop. The hot cutover tool can now be disconnected.

1. Connect the tool
2. Measure and sample
3. Loop take-over
4. Match output
5. End take-over

Advantages

How to save money and reduce risk

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Advantages

How to save money and reduce risk

- | The IST-203 is the only electrical loop take-over device, specially developed for DCS migrations
- | Suitable for all 4-20 mA based DCS and PLC control loops
- | Easy operation – step-by-step software guided migration
- | Safe and controlled hot cutover
- | MODBUS® interface for parallel migrations

Advantages

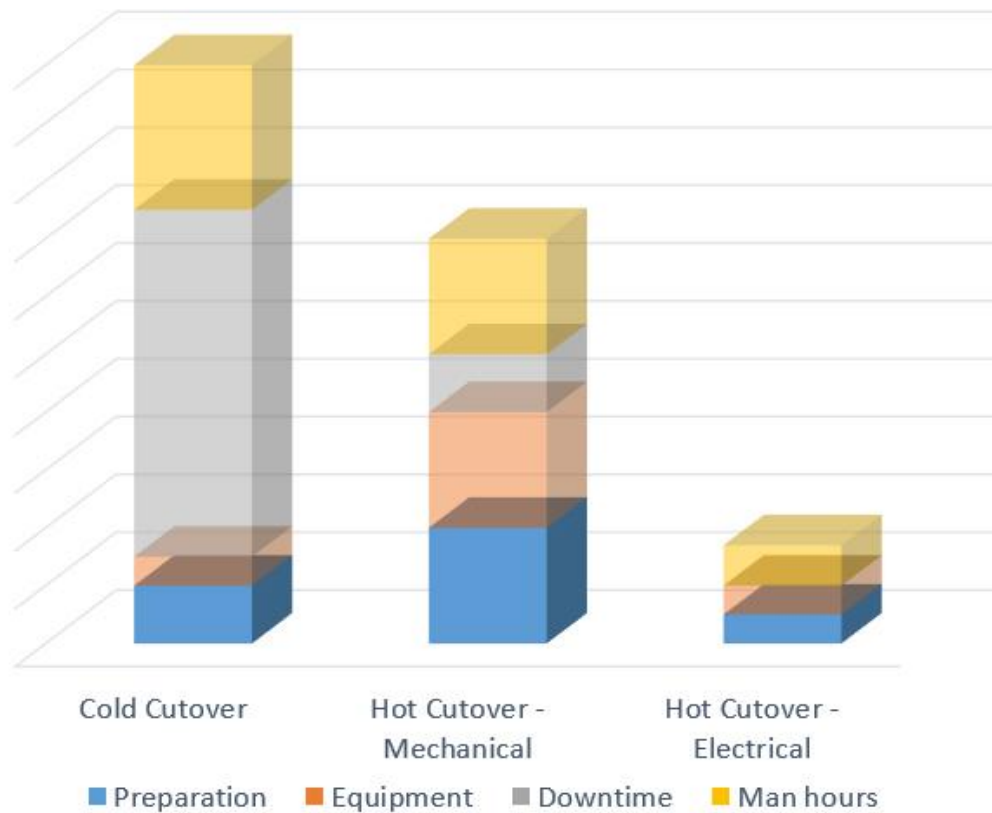
Enhancing safety

The IST-203 helps reducing risks during a hot cutover DCS migration by implementing:

- | **Connection check** – before take-over, the system is able to check the loop connection to verify the loop and the impedance of the field equipment
- | **Offset control** – the offset control function allows the user to manually control the loop during the migration, opening the possibility to react to any unexpected process changes
- | **Output match** – To avoid any offset, the new DCS should be set to the same value as the old DCS. To verify this, the tool checks the new system output. If the output is not correct, the tool will absorb any offset and give directions to adjust the new DCS.
- | **Loop-by-loop migration** – Loop-by-loop migration ensures quick problem detection and identification
- | **Software guidance** – The software guides the user through the migration process, minimizing human error and risk

Advantages

Financial

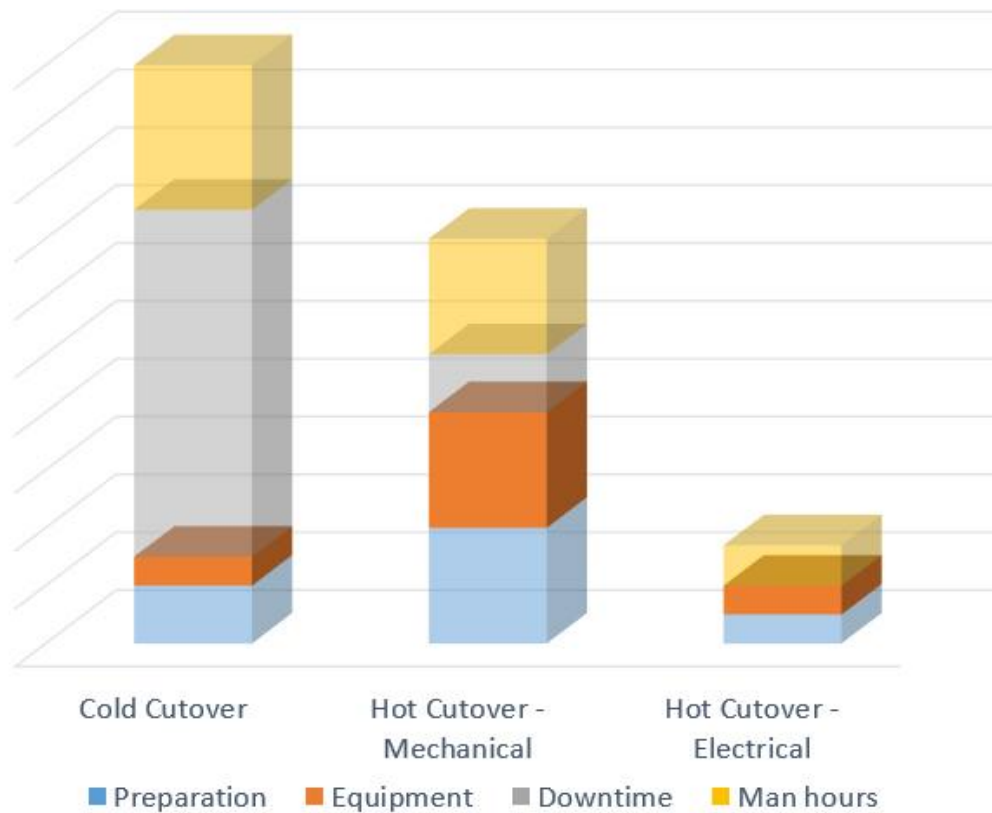


Less preparation costs

The preparation is brought down to the pre-studies and the safety studies. The IST-203 does not require any mechanical work, system adjustments or complex planning, significantly reducing the costs for preparation time and equipment.

Advantages

Financial

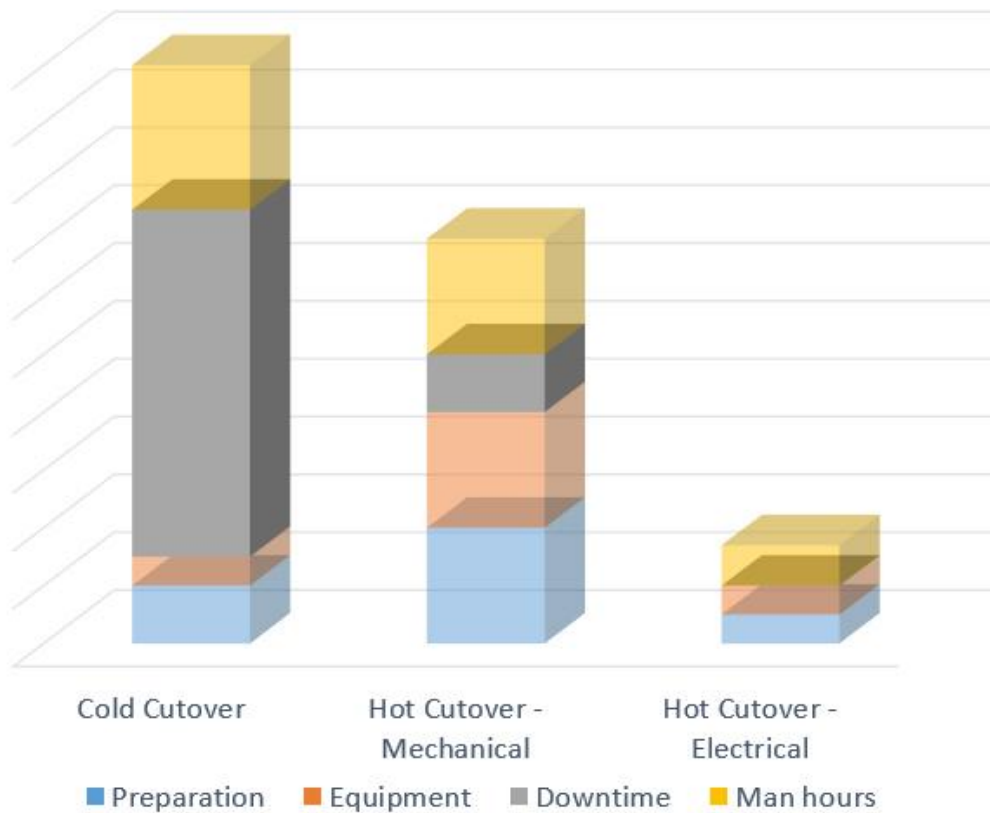


Less equipment costs

The IST-203 is the only significant equipment needed. It can be used on every critical loop without any adjustments or extra equipment, saving on time, special mechanical constructions and system adjustments.

Advantages

Financial

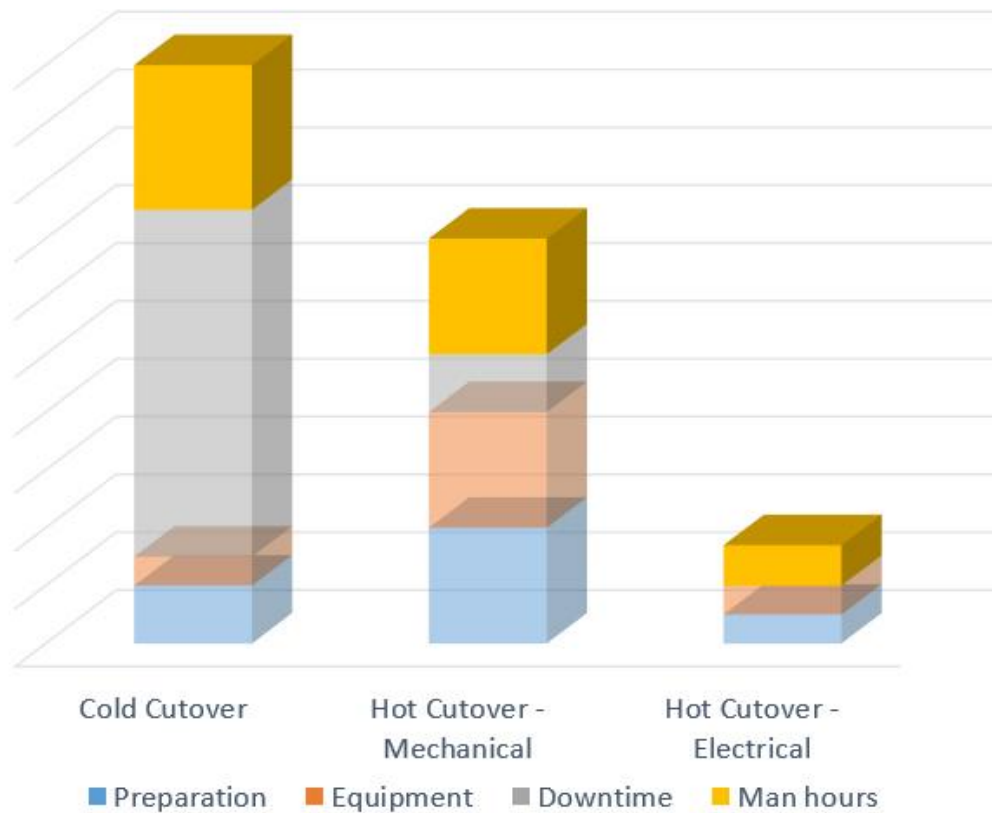


Downtime

The IST-203 is developed to take over and maintain the control loop during active process conditions, preventing the user from any downtime or production loss.

Advantages

Financial



Manhours

A typical loop take-over with the Hot Cutover Tool takes about 10 minutes, and with the limited preparation time, using the Hot Cutover Tool gives a significant saving on man-hours and migration duration.

Advantages

The solution

The IST-203 Hot Cutover Tool brings the most efficient hot cutover DCS migration, in terms of both time and money, in the safest possible way.

About the company

General presentation

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About the company

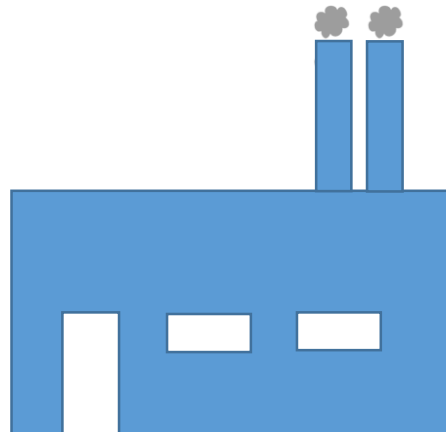
Profile

- | Istec is established in The Netherlands in 1974 as a supplier of industrial measurement and control equipment
- | Privately held company
- | Offices in The Netherlands and Belgium
- | Target markets: Energy, Chemical, Petrochemical, Oil and Gas, Aluminium, Steel and Paper
- | Profile: Istec has been a household name in the measurement and control technology and supplies a wide range of solutions from both its own production and renowned names such as Jaquet, Meggitt, Fuji, Fischer, Metrix and SWR. With the specialized divisions, the company is involved in product development, commissioning and service.

About the company

Contact details

The IST-203 Hot Cutover Tool keeps your process running during your DCS migration



Istec International BV
Meer en Duin 8
2163 HA Lisse
The Netherlands

Tel: +31 (0)252 433 400
E-mail: mail@istec.nl
Web: www.istec.nl