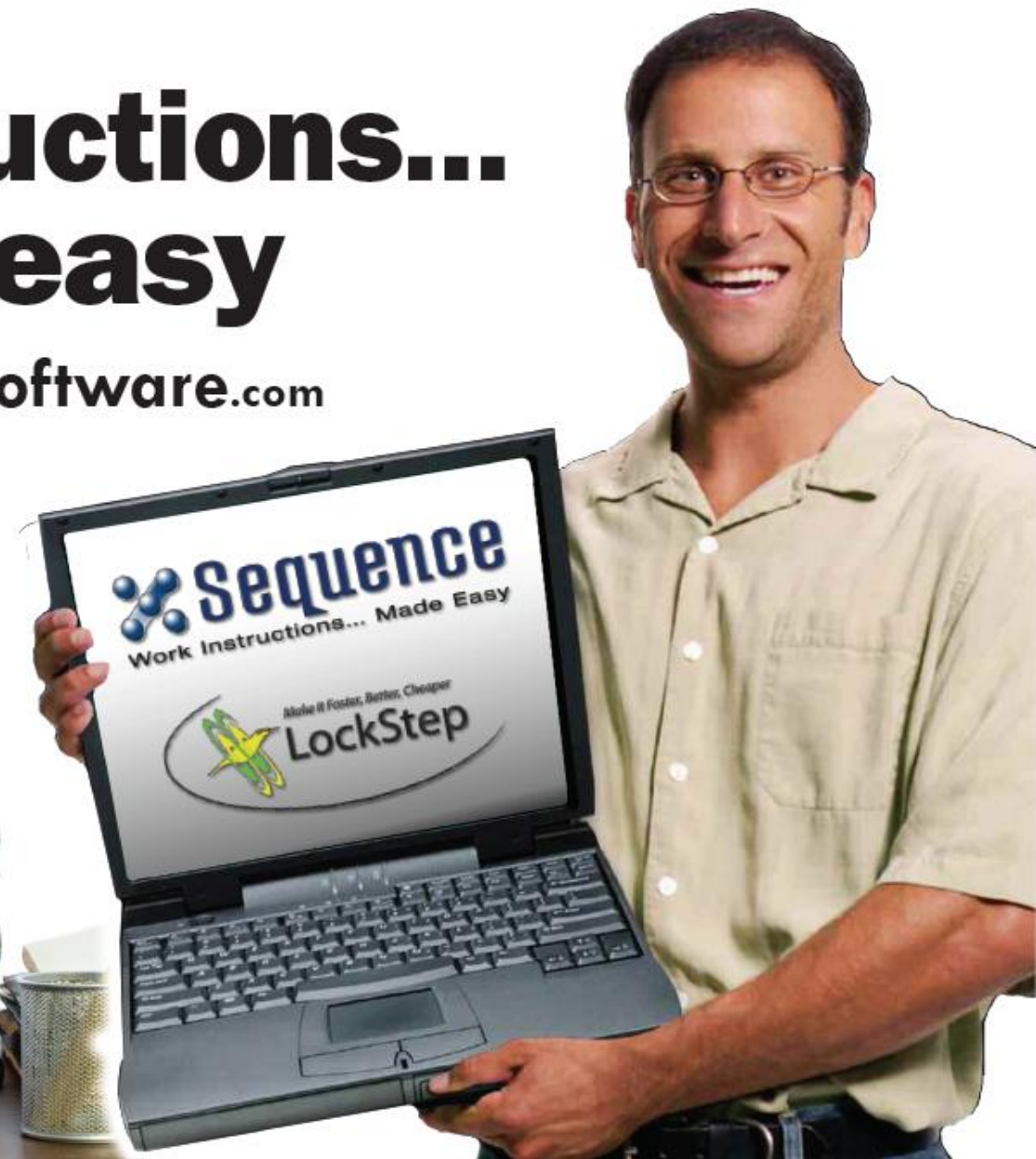
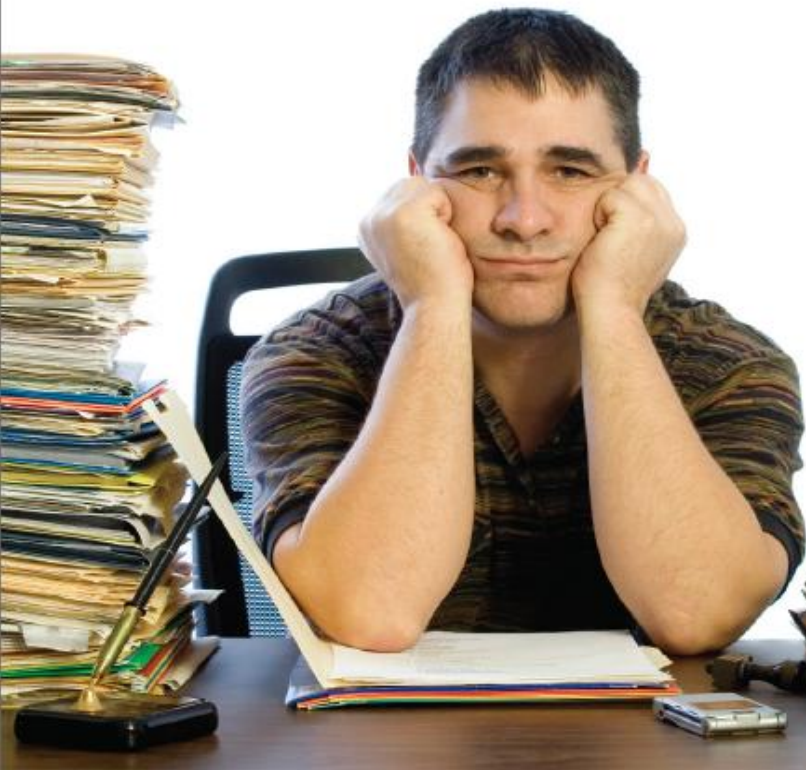


# Work instructions... made easy

[www.sequencesoftware.com](http://www.sequencesoftware.com)



# About FFD, Inc.

- FFD's Sequence Enterprise Software is used by manufacturing companies worldwide to author, manage, deploy and validate critical manufacturing work instructions.
- ***Sequence is a vital enabling technology accelerator for our customers allowing them to add significant value to their bottom line.***



# A History of Customer Driven Innovation

2003

- Market research, beta testing, customer surveys
- Released V1.0 WinSequence and WebSequence, first database driven software for developing visual Work Instructions in a multi-user authoring environment with optional real-time shop floor operator interface

2004

2006

- Released V2.0 with major updates to data model and all user interfaces
- Released MRPUltra as a product for integration to MRP/ERP

2008

- Released V2.5.25 with enhanced Work Order functions to address configurable products and customized work orders
- Developed multi-product plan for small to large business requirements

2009

- Released LockStep single-user authoring version, fully scalable to allow small companies or early 'pilot to production' projects

2010

- V1.0 MESUltra for integration to MES systems
- Released V2.6 further streamlining user experience in WebSequence

2011

- To release V2.7 in March/April with WebSequence Media and MESUltra
- Release V3.0 end 2011—Advanced Aero/Military Pack



# Sequence is . . .

- A collaborative, multi-user enterprise work instruction solution
- Designed for the manufacturing enterprise needing work instructions that are fully integrated with ERP/PLM/MES and the ability to deploy in a real time, interactive paperless environment.



# Customers & Industries

Regulatory High-Tech,  
Military, Aerospace, Vehicle Test



Quickset  
(Moog)



Sechan



Novatel



Nano Instruments  
(MTS, now Agilent)

Regulatory Automotive & Vehicle OEM



**CATERPILLAR®**

**TENNECO**

Consumer Products



Jeld-Wen



Hayward Pool Products  
Goldline Controls

Others:

Medical Devices

Marine

Food &  
Beverage

Electronic Mfg

Power &  
Energy Systems





Technology



# Sequence Technology

- Sequence is a software package designed specifically for creation, maintenance, validation and deployment of manufacturing work instructions
  - Database-driven, Dynamic Work Instructions
  - MS.net, C#, SQL Server technologies
  - Some data is shared and can originate from master files such as ERP/MRP/PLM
  - Data structure easily integrates with other business and manufacturing systems
  - Sequence is 'standard' out of the box, but highly configurable by the user to produce a wide range of Work Instructions in different formats published either via paper or electronically



# Architecture

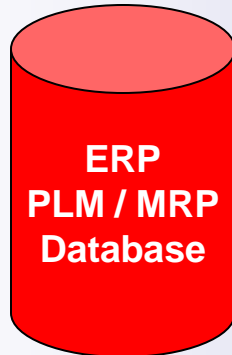
## WinSequence™ - Robust Tool to

- Author;
- Edit;
- Manage Versions; and,
- Publish Work Instructions

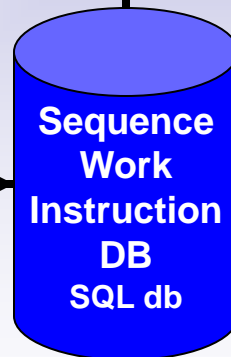
## WebSequence™ - Real-Time Inter-Active Paperless System

- Electronic View of Most Recent Instructions;
- Work Order Specific Instructions;
- Data Collection; and,
- Shop Floor Feedback

Integration to ERP/PLM/MRP to capture BoMs, Routings, Work Orders to auto populate in Sequence database



Develop new standard Work Instructions stored as objects In database (not documents)



UW 2 Root Installation	DW 3 Fiber Above Root		
Step Time	0:10	Step Time	1:12
Blade Total	1:47	Blade Total	2:32
Blade Variance	-0:02	Blade Variance	0:04

DHR, Objective Evidence

System can provide proof of compliance.

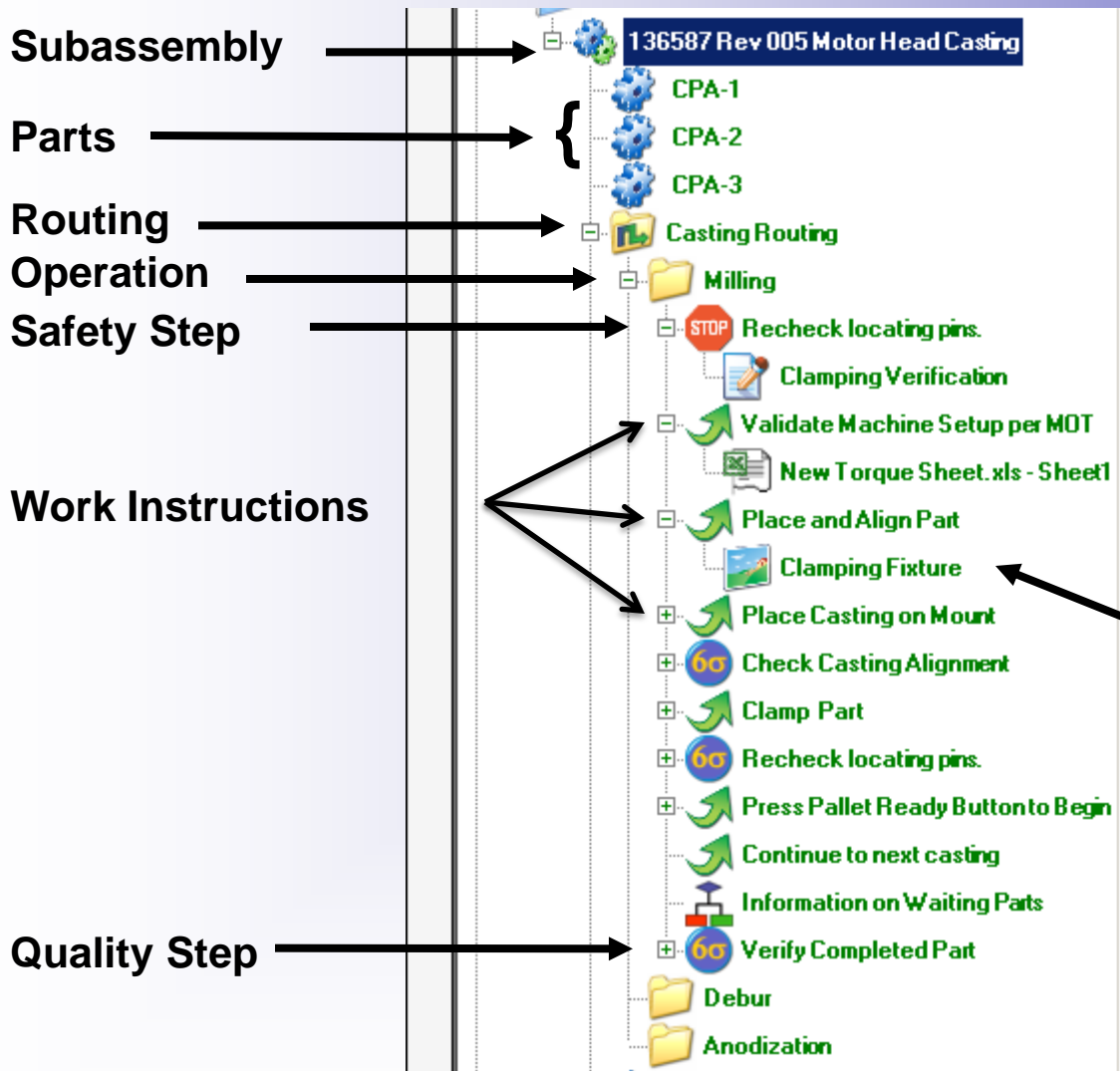
Instructions are electronically delivered in Real-Time to the shop floor.



Operators can provide electronic feedback and system automatically captures build history (user, date, time, etc.)



# WinSequence graphical user interface



All information related to the work instructions is organized and created in a patent pending smart 'tree' structure. Different 'objects' on the 'tree' have different icons.

Media items



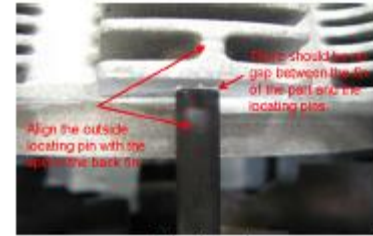
# PDF output

- 60 Check Casting Alignment
- Casting Alignment
- Clamp Part
- Clamp Part
- 60 Recheck locating pins.
- Clamping Verification

1.36587	Rev-005	Version:1	Approved	Supercodes:
---------	---------	-----------	----------	-------------

## 2.5 Check Casting Alignment

Ensure that casting is properly aligned on locator pins before proceeding.



Casting Alignment

## 2.6 Clamp Part

Clamp down the part using the T-handle location just inside the machine. Hold the part while you tighten the clamps to ensure the part does not shift.



Clamp Part

## 2.7 Recheck locating pins.

Recheck all locating pins after you tighten the clamp to ensure they are all still touching the part.

## Clamping Verification

Recheck all locating pins after you tighten the clamp to ensure they are all still touching the part.

Data Captured	Completed By	Date Completed

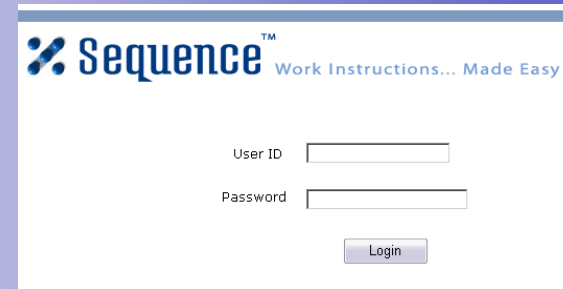
Data is re-formatted automatically from 'tree' structure to PDF document using a selected template from the Sequence library



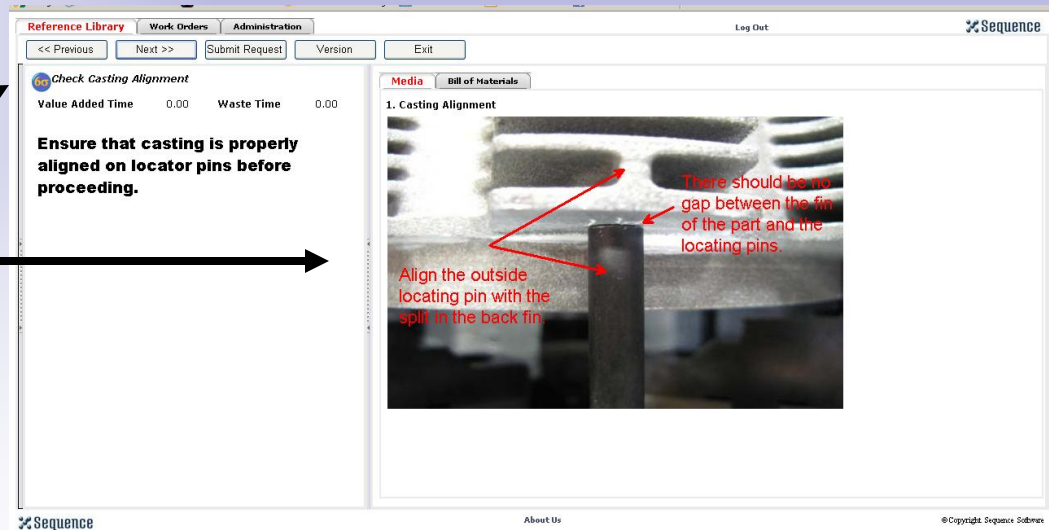
# Electronic deployment

WebSequence allows electronic access to only valid published version of instructions

- Secure login
- Step by step presentation



The login screen features the WebSequence logo at the top left, with the tagline "Work Instructions... Made Easy" to its right. Below the logo, there are two input fields: "User ID" and "Password". A "Login" button is positioned below the password field.

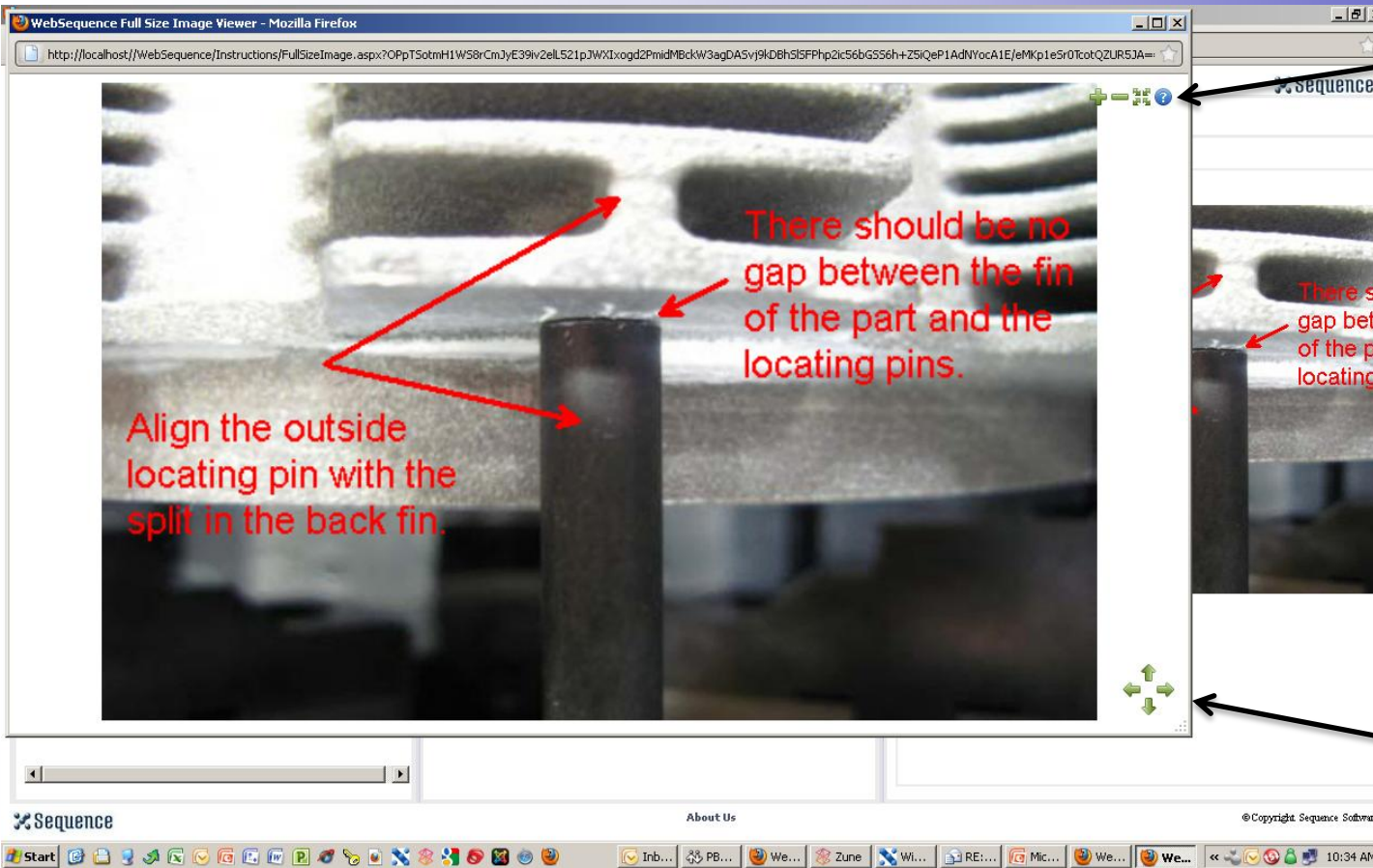


A screenshot of the WebSequence software interface. The top navigation bar includes "Reference Library", "Work Orders", and "Administration". Below this, there are navigation buttons: "<< Previous", "Next >>", "Submit Request", "Version", and "Exit". The main content area is split into two panes. The left pane is titled "Check Casting Alignment" and contains the text: "Ensure that casting is properly aligned on locator pins before proceeding." The right pane is titled "1. Casting Alignment" and displays a photograph of a casting part with a locator pin. Red arrows point to specific features with text annotations: "Align the outside locating pin with the split in the back fin" and "There should be no gap between the fin of the part and the locating pins." The bottom of the interface shows the "Sequence" logo, "About Us", and "© Copyright Sequence Software".



# Electronic deployment

Full-screen view of image is available for fine detail.

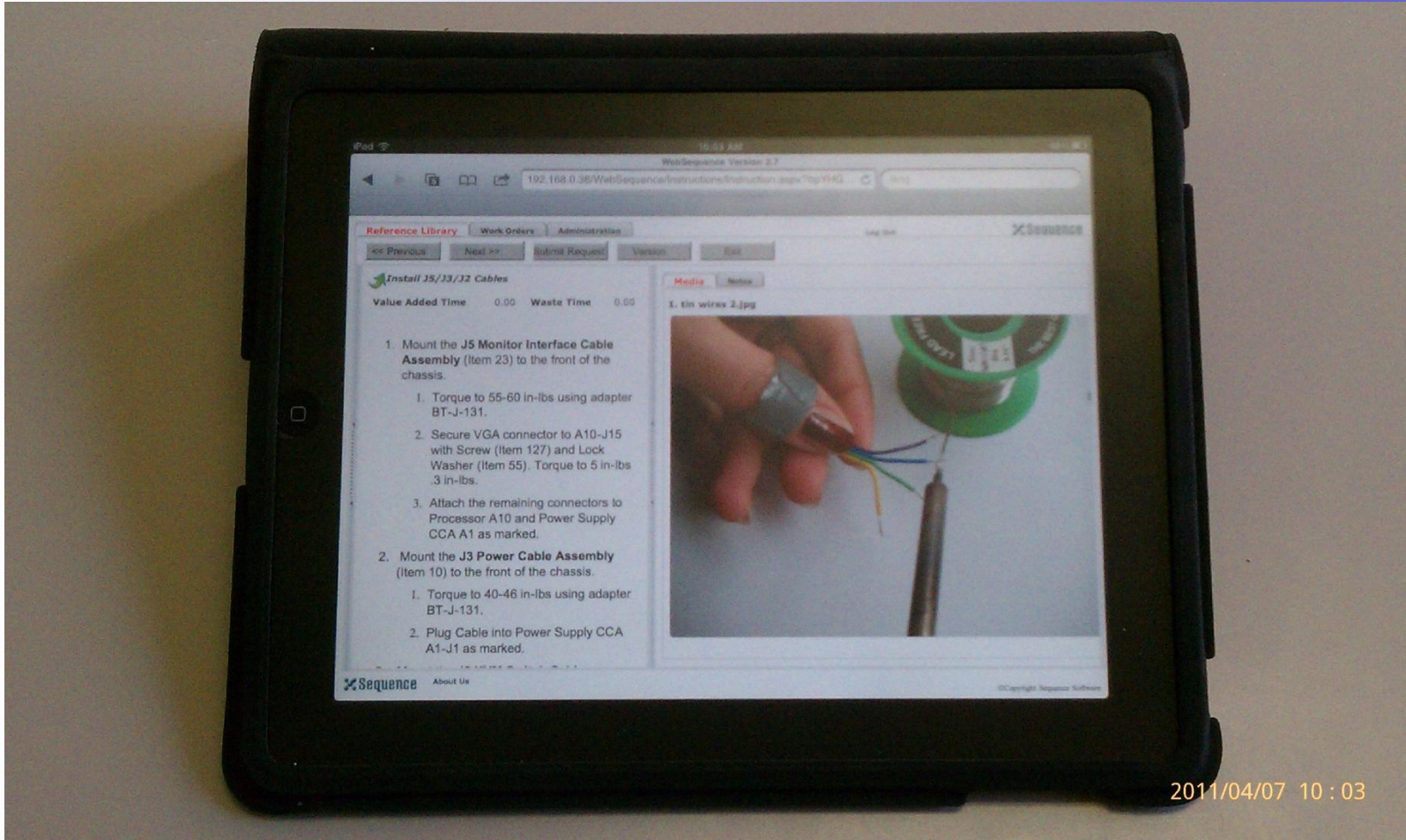


Zoom +/-

Navigate



# Tablet options are expanding





Enabling manufacturing excellence!



# Sechan Electronics

- **95% reduction in total change implementation cycle time**
- **200 man hours per month reduction in administrative labor**
- **Manufacturing engineering capacity gains in excess of 20%**

"Sequence has allowed us to efficiently develop and deploy electronic work-instructions, and perhaps more importantly, timely corrective work instruction updates."

Dave Williams  
President, Sechan Electronics

## Traditional Process Control Documentation Change Process

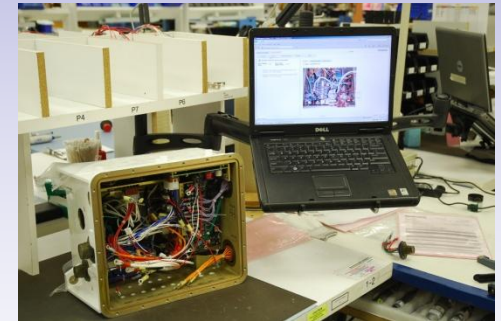


Queue Issues, Looping, Process Lapses, Labor Intensive

## New Process with Sequence



**Electronic Notification / Approval / Distribution**



# American Science & Engineering

- ***15% reduction in new product deployment and engineering time***
- ***240+ man hours per month reduction in administrative labor (1.5 people per 8 hour shift)***
- ***Electronic deployment allows “just-in-time” learning***
- ***Reduced audit errors due to barcode scanning and electronic reporting***

**"Sequence's ability to be integrated with our Oracle ERP system has dramatically improved our capability to incorporate process and quality improvements into our production documentation "**

**Doug Capri,  
Manufacturing Engineering;  
AS&E**



# Moog Quickset

- ***Work instructions versioned to specific work orders / serial numbers provide complete traceability for any build and an easy path to objective evidence***
- ***Complete revision history for serial-number / work-order specific information maintained for auditing and defect tracking***

**"The integration of our work instructions in Sequence Enterprise to our Bill of Material and Work Order systems in Visual ERP gives us complete traceability for our products"**

**Brian Hallstrom,  
VP of Manufacturing;  
Moog Quickset**

