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# Zenator Systems Walkdown Capture Case Study



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These notes were prepared by **Felix J Paul, Zenator Super User**. From September 2014 to July 2016 at final Handover to Operations, Felix held the position of Zenator Manager, on ExxonMobil's Banyu Urip Project, Java, Indonesia. Banyu Urip is a \$8bn, 160,000 bbl/d onshore oil & gas production facility located in Central Java about 170 kilometres west of Surabaya.

Regarding the use of Walkdown Capture on Banyu Urip, the biggest wins for us were the following:

1. **Clarity of punch list description:** Given that English was not the first language of the many Indonesian Engineers involved in Punch List walkdowns, the Walkdown Capture feature of Frequently Occurring Faults and the ability to take photos of the detected fault significantly reduced the time needed to capture punch list items. It also reduced ambiguity for the action party responsible in closing the punch list items.
2. **Adherence to walkdown scope and boundaries:** Walkdown Capture helped to keep the walkdown team within the boundary of the walkdown. Although this is exactly what the subsystem boundary drawings are supposed to do, quite often punch list items are raised on equipment that are outside the boundary of the walk down resulting to potential incomplete works being punched, but with Walkdown Capture all the tags within the boundary are loaded onto the device during preparation by the Zenator Power User. This effectively provides some sort of walkdown scope and prevents the team from capturing punch list items on tags that are not within the scope of the walkdown. Where a tag is legitimately part of the walkdown scope but not loaded onto the device, it raises the potential of an invalidated database and signifies the need for validation of the database, plus proper assignment of additional Checksheets to over inspection of the missing tags.
3. **Overall turnaround around time was significantly improved.** Prior to the deployment of Walkdown Capture and on walkdowns where Walkdown Capture was not used even after it was deployed, it would normally take 48hrs after the walkdown to perform the following steps to get the punch list items into Zenator, and involve multiple project team members:
  - Consolidate and type handwritten punch list items - *Walkdown team*
  - Review the PLI Category, assign Action Parties and approve PLIs to be entered into Zenator - *Lead commissioning engineer*
  - Check to ensure every tagged item punched existed in Zenator - *Zenator team*
  - Where tag number does not exist in the subsystem walked, contact walk down team to clarify - *Zenator Team*
  - Import all validated and approved punch list items into Zenator - *Zenator Team*
  - Refresh Report Plus and run report - *Zenator team*
4. Using Walkdown Capture, the following process would take about 2½ hours:
  - Consolidate and type handwritten punch list items - *Walkdown team*
  - Review the punch list items directly on each device used on the walkdown
  - Review the PLI Category, assign Action Parties and approve PLIs to be entered into Zenator - *Lead commissioning engineer*. **Not required.** Categories assigned to frequently occurring faults have already been reviewed and approved prior to walkdown, and Action By assigned when PLIs are raised
  - Check to ensure every tagged item punched exists in Zenator - *Zenator team*. **Not required**, since punch list items are directly assigned to tags pre-populated from Zenator
  - Where tag number does not exist in the subsystem punched, walkdown team to clarify - *Zenator Team*. **Not required**
  - Import all validated and approved punch list items into Zenator - *Zenator Team*. Simply plug the device into Zenator admin workstation to import tags
  - Refresh Report Plus and run report - *Zenator team*.

## Manhour Saving and Cost Comparison

The steps in item 3 above were estimated to take an average of 5 team members working 10 hours per day 2 business days to manually complete the process of Recording PLIs, equating to 100 manhours; this includes 2½ hours for automatic population of PLIs into Zenator. A similar process and cycle time would apply to Clearing PLIs. At an average cost per manhour of \$150, the cost of Recording or Clearing PLIs is **\$15,000**.

Using Walkdown Capture the equivalent cost of 2½ hours process time for each walkdown, Recording or Clearing PLIs, was **\$375**, saving **\$14,625 for each Punch List walkdown**.

**Over an 18 month period, 20 mobile devices were continuously in use for Punch List walkdowns. This saved the project over \$2,250,000. If each device were used Recording and Clearing PLIs just one time each week, it is estimated the cost savings from the use of Walkdown Capture would have been in the region of \$4,500,000.**

**For each Walkdown, the savings are measured in much faster turnaround times, a cost-reduction factor of 40 and more efficient deployment of essential project team members.**