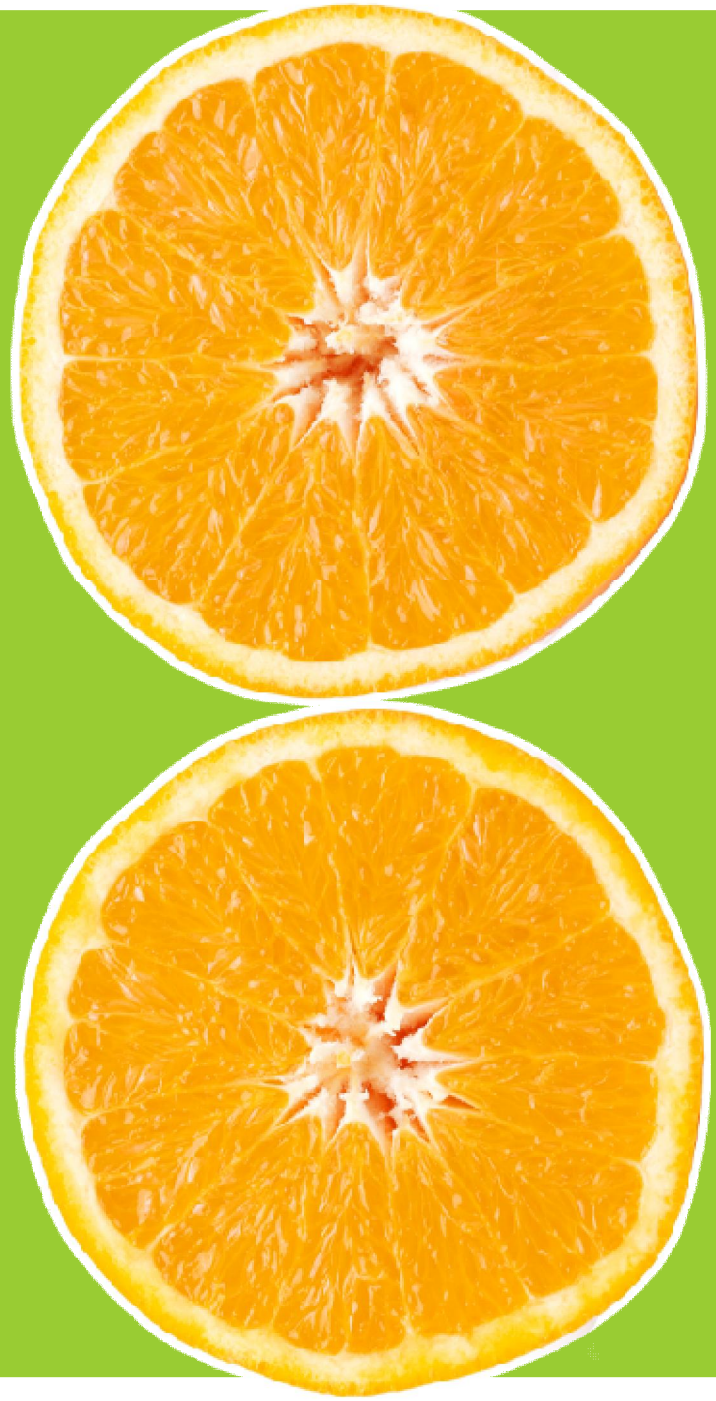

FlexLab/SymPathy

Workflow Management

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- Definition of SymPathy Workflow Management (SWM)
- Short description SWM components
- Detailed description of SWM components
- Where are we now?
- …and what are the next steps?

SymPathy Workflow Management

- Marking and Labeling
- Logging – Tracing and Tracking
- Automation
- Statistics and Benchmarking

What it’s all about…

- Mark or label all items using barcode or 2D barcode
- Register by marking, not the other way around
- Utilize barcodes for instrument connectivity and other automation
- Utilize barcodes to log events – but also to facilitate further registration and marking
- Utilize logs to track items real-time and to trace events afterwards
- Utilize logs to benchmark performance, to pinpoint bottlenecks and to measure improvement

Mark or label all items using barcode or 2D barcode

Mark or label all items
Register by marking
Instrument connectivity and automation
Log events and facilitate registration
Logs to track and trace
Performance, bottlenecks and improvement

- Incoming containers are labeled with RID in a barcode
- Use that barcode to retrieve the electronic requisition
- Automatically create LID and print 2D barcode labels
  - Differentiate barcode content depending on Requisition Label or Container Label
  - Both contains LID, the latter also contains Container Number
- Mark cassettes with 2D barcodes
  - Containing LID, Container Number and Cassette Number/Letter
- Mark slides with 2D barcodes or print 2D barcode labels to put on slides
  - Containing LID, Container Number, Cassette Number/Letter and Slide Number or Staining/Antibody
- With different barcode content for each item, SymPathy can depict what item is scanned and respond accordingly

Register by marking, not the other way around

Mark or label all items
Register by marking
Instrument connectivity and automation
Log events and facilitate registration
Logs to track and trace
Performance, bottlenecks and improvement

- In SymPathy today, you need to register the cassettes in order to be able to print them
- You need to register the stainings in order to be able to print slides or labels

Instead:

- Print cassettes by reading the Container Label – as they are printed, they are registered
  - (Either print when scan, or use touch screen to continuously ”print next”)

- Print slides by reading the Cassette – at least routine stainings can be automatically registered as they are printed
  - (Either register stainings on before hand and print all upon scanning cassette or pop up a MRUL for each scan and print accordingly)

Utilize barcodes for instrument connectivity and other automation

- 2D barcodes can be used by analyses instruments
  - If not, ordered analyses are compiled to a work list that can be transferred to the instrument – one registration only, when ordering
- 2D barcodes can be used by Aperio slide scanners
- They can surely be used to much more…

Utilize barcodes to log events – but also to facilitate further registration and marking

Mark or label all items
Register by marking
Instrument connectivity and automation
Log events and facilitate registration
Logs to track and trace
Performance, bottlenecks and improvement

- Place a barcode reader at every workplace
- Read the barcode to:
  - a) Retrieve information in SymPathy
  - b) Log the work task at hand

- Place network connected barcode readers where ever a work task occurs that does not involve a computer (de-hydration, embedding, sectioning, archiving etc)
  - Connect events to respective ip-address and hence log automatically (drawback: userid)

- Print cassettes and register them by reading Container barcode

Utilize logs to track items real-time and to trace events afterwards

Mark or label all items
Register by marking
Instrument connectivity and automation
Log events and facilitate registration
Logs to track and trace
Performance, bottlenecks and improvement

- Logging can be done implicitly, as a SymPathy related work task is carried out
- Logging can be done explicitly when a non computer supported work task is carried out
- All logs contain work task, date and timestamp

- All items can thereby be tracked real-time to depict status in workflow
- All logs are stored for later traceability

Utilize logs to benchmark performance, to pinpoint bottlenecks and to measure improvement

Mark or label all items
Register by marking
Instrument connectivity and automation
Log events and facilitate registration
Logs to track and trace
Performance, bottlenecks and improvement

- Utilization of timestamp facilitates measuring elapsed time between every logged event
- Through statistical analyses and data mining, bottlenecks can be highlighted
- To ensure change of work is really an improvement, and nit just a change (or worse…), it must be possible to measure time frame ”before and after”
- Suitable tools for data mining could be MS Report Services and QlikView

Where are we now?

…and what are the next steps?

Marking

Mark or label all items
Register by marking
Instrument connectivity and automation
Log events and facilitate registration
Logs to track and trace
Performance, bottlenecks and improvement

Already in place:

- Barcode labels for Requisitions and Containers, also with 2D barcodes
- Marking of cassettes
- Marking of slides
- Slide labels – with barcode / 2D barcode
- Support for more information than Requisition Id in the barcode

Coming soon:

- New Label Routine for Windows Printer Drivers
  - Support for ”any” kind of printer/label printer
  - 2D barcodes on ”all” devices

Registration

Mark or label all items
Register by marking
Instrument connectivity and automation
Log events and facilitate registration
Logs to track and trace
Performance, bottlenecks and improvement

- Idag registrerar man uppgifter för att sedan skriva ut etiketter mm
- Tänk tvärtom – skriv ut etiketter och därmed är det registrerat

- Read the barcode on the container, print each cassette as it is to be used. When printed, it is registered in SymPathy
- Read the barcode of the cassette to retrieve the stainings ordered, print slides or labels as theyr are to be used. When printed, they are registered in SymPathy
- Read the barcode of the slide and the corresponding requisition is opened in SymPathy

- We are working on a replacement for the ”Lab Window” in order to simplify the registration and printing at grossing, but also new support for sectioning
- It would be prefered to be able to use for instance small touch screens or foot pedals or other input devices instead of keyboard and mouse

Instrument connectivity

Mark or label all items
Register by marking
Instrument connectivity and automation
Log events and facilitate registration
Logs to track and trace
Performance, bottlenecks and improvement

Already in place:

- Bi-directional communication with BondmaX
- Uni-directional communication with DakoLink
- Integration with Aperio Slide Scanner

Coming:

- Bi-directional communication with DakoLink
- Bi-directional communication with Ventana
- Aperio integration whitout middle-ware

Logging

Mark or label all items
Register by marking
Instrument connectivity and automation
Log events and facilitate registration
Logs to track and trace
Performance, bottlenecks and improvement

Already in place:

- Most work tasks/events are automaticaly logged
  - From version 2.4.0 time stamp is included
- Batchwise logging with barcode readers for work tasks outside of SymPathy
- Network connected barcode readers to enable logging wihtout a workstation
- Loggs are compiled in ”Requisition History” – presents logs for a selected requisition
- Most logging is done directly to the sql database = easy to search in

Coming:

- Easy-to use and flexible search and presentation tool - QlikView
- A more flexible solution for network connected barcode readers
- Packaged and documented complete solution

Use the logs!

Even if you have adopted Lean Production, it is important to be able to measure your business.

Too be able to judge the result of a change, you need to know the original outturn.

Tieto can offer tools to measure elapsed time between work tasks and contribute to reduce these times