Status Optical Scanner

Lea Steder

DESY FLA-ILC
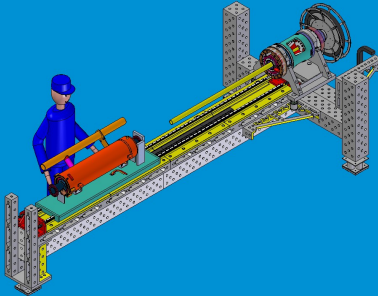
ILC-HiGrade Workshop

22. November 2010

content

1. OBACHT setup

2. bench system status

3. camera system status

4. steering concept

5. outlook and timeline

optical scanner system OBACHT

Optical Bench for Automated Cavity inspection
with High resolution on short Timescales

- bench with cavity on sliding carriage

- camera mounting with torque motor

- steering software for automated inspection

optical scanner system OBACHT

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bench system status

hardware

- bench
    - support structure ✓
    - sliding carriage ✓
    - internal measure ✓
    - cavity mounting to do
    - camera mounting to do
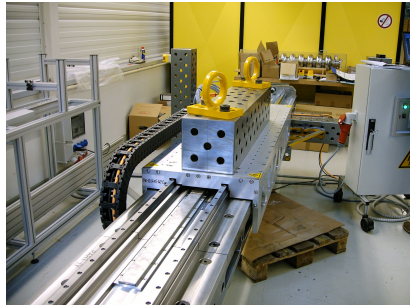
bench system status

hardware

- bench
  - support structure ✓
  - sliding carriage ✓
  - internal measure ✓
  - cavity mounting to do
  - camera mounting to do
- motors
  - linear assembly ✓
  - calibration ongoing
  - torque assembly to do
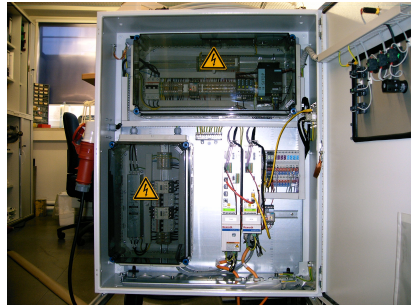
bench system status

hardware

- bench
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    - cavity mounting to do
    - camera mounting to do
- motors
    - linear assembly ✓
    - calibration ongoing
    - torque assembly to do
- electronics
    - control cabinet ✓
    - end switches ✓
    - emergency switches ✓
    - integrate torque axis to do

bench system status

hardware

- bench
    - support structure ✓
    - sliding carriage ✓
    - internal measure ✓
    - cavity mounting to do
    - camera mounting to do
- motors
    - linear assembly ✓
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    - torque assembly to do
- electronics
    - control cabinet ✓
    - end switches ✓
    - emergency switches ✓
    - integrate torque axis to do

software

- direct steering ✓
- PLC steering
    - first steps in software ✓
    - move system via PLC ongoing
- LabVIEW interface via OPC server to do

camera system status

safety systems

- laser system: free light path ✓
- target system: measures eccentricity of camera tube ✓
- implementation to OBACHT to do

picture cycle

- auto-focus algorithm ✓
- illumination optimization algorithm to do
- picture taking ✓
- ID & position stamping to do
- (online) picture processing and analysis ongoing
  → Marc's talk

steering concept of automated inspection

steering via a single LabVIEW interface including

- safety systems from bench and camera
  $\rightarrow$ interlock

- camera and cavity movement
  via PLC

- picture cycle

- data storage and backup

outlook and timeline
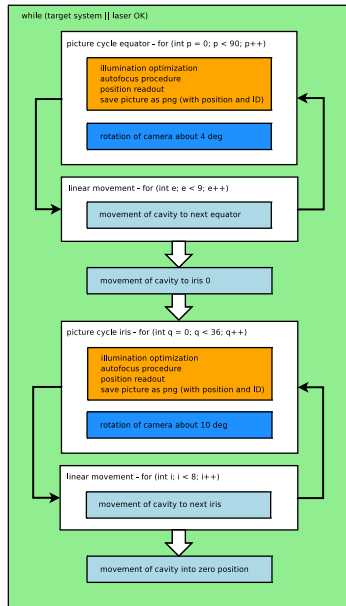
– all dates have to be taken with a pinch of salt –

- missing mechanical parts $\rightarrow$ very end of this year
- assembly $\rightarrow$ January

- PLC control $\rightarrow$ end of the year
- steering system skeleton $\rightarrow$ end of January

- first inspection $\rightarrow$ spring time
- new location on DESY site for OBACHT $\rightarrow$ summer 2011
- first XFEL cavities $\rightarrow$ end of 2011