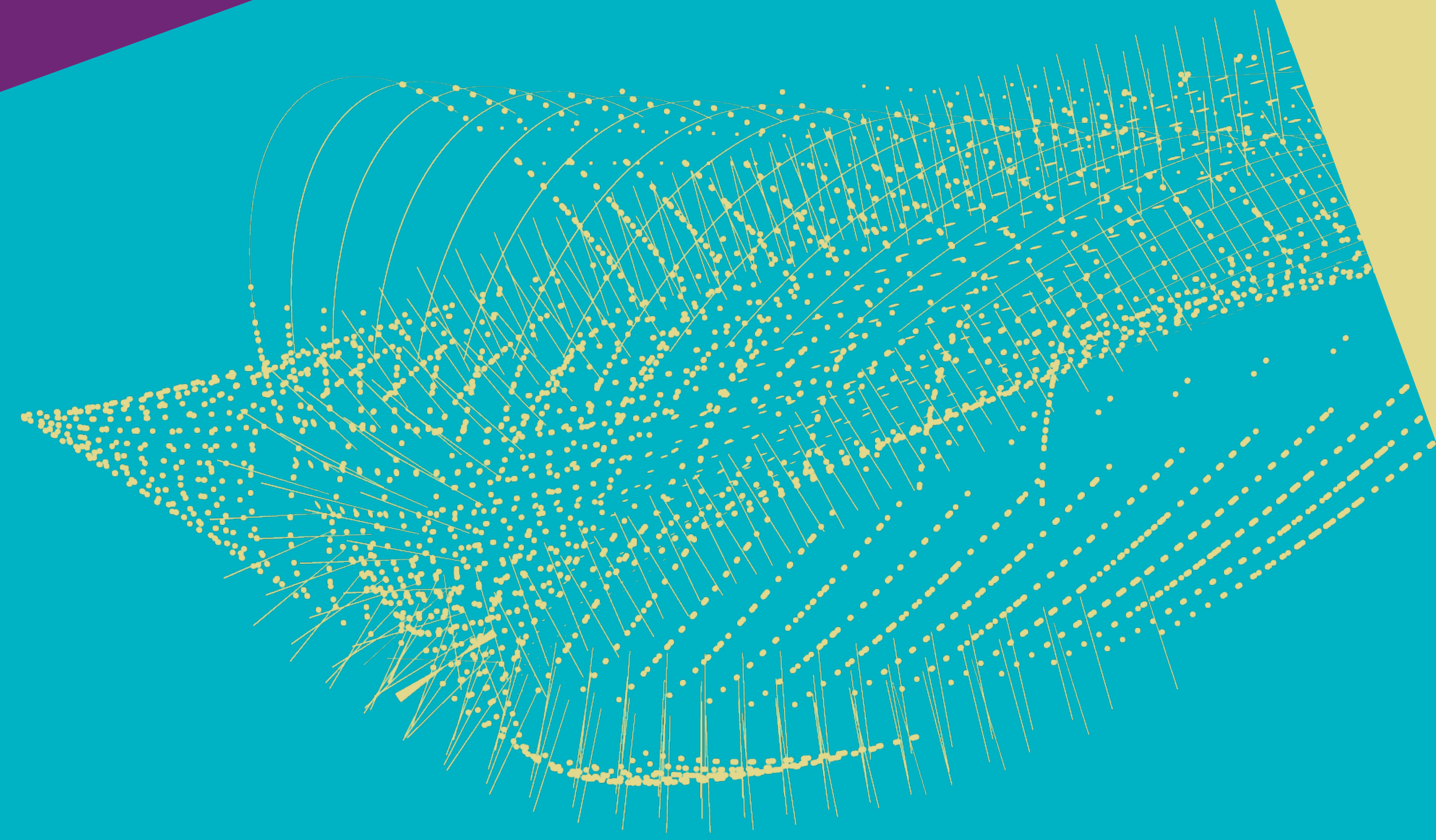




RONALD STARINK

COMPUTER TECHNOLOGY

Workshop Instrumentation at
Nikhef
2019-02-06



CT – 3 activities

- CT-B (generic IT infra)
 - Bart van der Wal
 - Daniel Kollmer
 - *Djuhaeri Harapan*
 - *Paul Kuipers*
 - Roel Roomeijer
 - Ronald Blinderman
 - Sem Vasiljan

- CT-PDP (large-scale computing)
 - Andrew Pickford
 - Dennis van Dok
 - Jan Just Keijser
 - Jouke Roorda
 - Mary Hester
 - Mischa Sallé
 - Sven Gabriel
 - Tristan Suerink
 - Wilco Baan Hofman

- CT-PO (software engineering)
 - *Henk Boterenbrood*
 - Mieke Bouwhuis
 - *Robert Hart*
 - Ton Damen
 - Vincent van Beveren

Name in Italics: will retire \leq 7 years

COMPETENCES

- Current

- Data acquisition & Control Systems
- Embedded software
- IoT
- GPU / parallel programming
- (Linux) system & security management
- Work at edge IT ↔ science
- Knowledge hardware solutions
- Software engineering
- Programming & scripting
 - C, C++, Python, Perl, Bash
 - WinCC

- No longer in CT

- “Integration” between 3 tech. Groups
- LabView
 - now in ET
- Building web sites / applications

SOFTWARE ENGINEERING ≠ PROGRAMMING

- Software engineering = profession
- Aim for robust & maintainable software
- Development process
 - Requirements
 - Design
 - Documentation
 - Testing
 - Bug reporting (traceability)

Opportunities:

- Strengthen SW engineering “soft skills”
- DevOps
 - More modern tools
 - e.g. Gitlab, Confluence, Trello
 - Continuous integration
 - → collaboration
- Writing documentation



```
ronalds : vi - Konsole
int main()
{
}
-- INSERT --          3,5      All
ronalds : vi
```

ISSUES

- CT-PO is small (5 persons)
 - → risk: becoming too small
- CT-PO too late involved in projects
 - → right from start, even if not 100% clear
- Dubious quality of SW by OIOs/Postdocs
 - ... to be used for 20 years in a detector?
- Knowledge preservation / transfer
 - Difficult to properly document *enough*
- Project Management
 - Expectations, communication, planning, ..

DISCUSSION

- No need for software engineering, our projects are not suitable for such approach. Physicists + ET can handle!
- Nikhef cannot continue to deliver in projects without technical expertise between CT, ET, MT.
- No need for expertise at edge IT ↔ science as long as postdocs exist.
- Nikhef must have the staff to be able to do everything in the field of IT ourselves. Hiring external IT expertise for projects is a really weird idea. (We gladly sacrifice a few OIO positions for that purpose).
- Concrete competences that must be sustained / acquired?