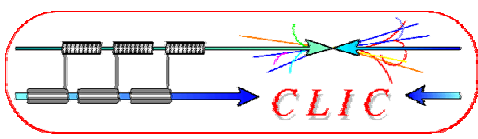


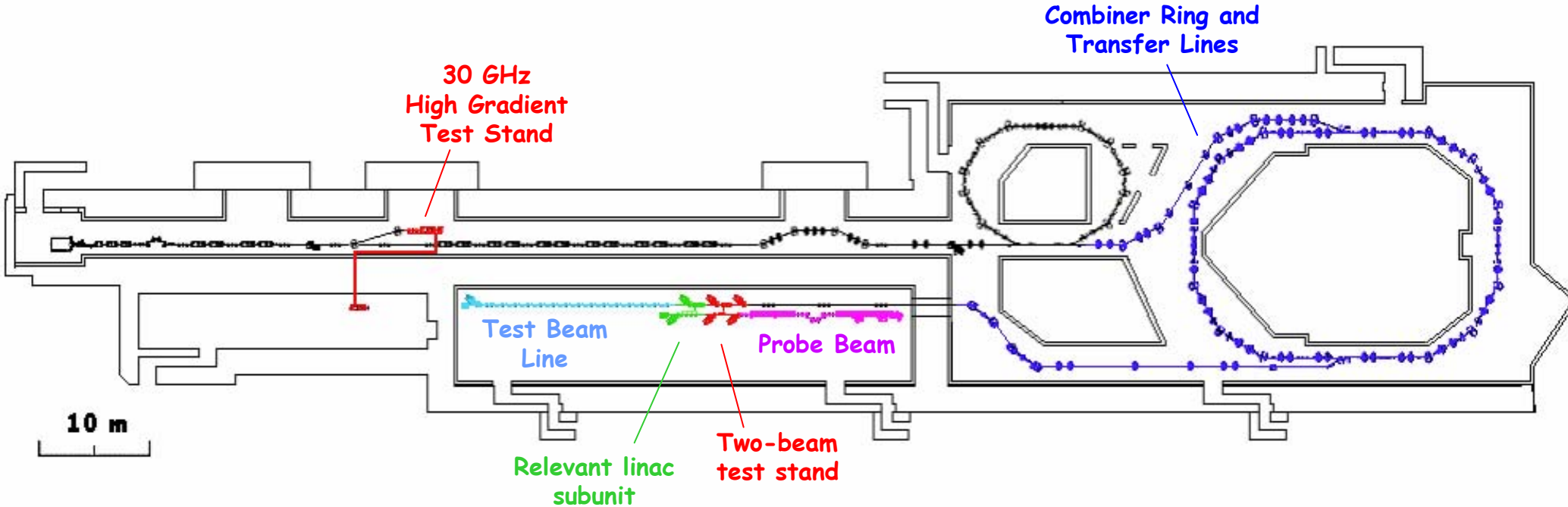
WP 8: Operation of CTF3

Frank Tecker – AB/OP
for the CTF3 team

- **Motivation**
- **Description**
- **Requirements**



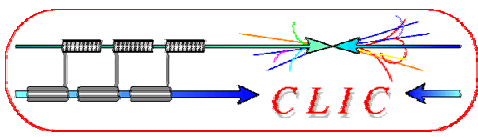
Motivation



• **ambitious test programme** for feasibility demonstration

=> large amount of beam time required:

- **commissioning** of the different stages
- experimental **beam dynamics studies**
- **30 GHz component testing**



Motivation (cont.)



• 30 GHz **high-gradient test stand** (WP 2.1)

- test damped accelerating structures
 - different material like Mo, W
- PETS with ON/OFF capability
- high-power waveguide components

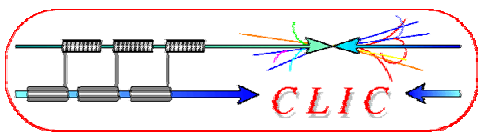
• time for conditioning difficult to estimate

- CTF II (16 ns): 95 hrs @ 5 Hz
- X-band test Mo structure (80 MV/m, 30 ns): 600 hrs @ 60 Hz

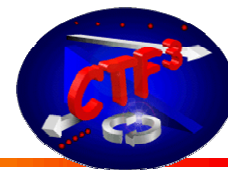
=> several 100 hrs per structure

• interleaved with **installation** work

=> limits operation period



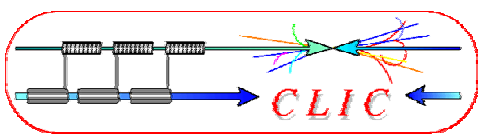
Present Operation



- **limited operation period**
 - installation work
 - during PS complex operation
- **limited manpower**

=> operate CTF3 for commissioning + studies

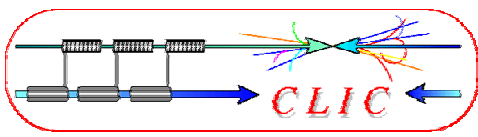
- 5 days / week
- normal working hours + evenings



Future Operation



- additional time for 30 GHz test stand
- **CONDITIONING**
power level changes not trivial!
=> much more beam time required
=> run CTF3 **24 hours** per day **in shifts**
- increasing complexity
=> need for **automatisation** hardware/software
advanced operation tools required
=> have a team for specific **software development**

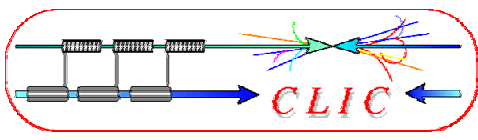


Operator Tasks



- operate the high-gradient **test stand**
 - condition and test 30 GHz structures and components
 - participate in **commissioning**
 - assist experimental **beam dynamics studies**
 - give **operational support** for the facility

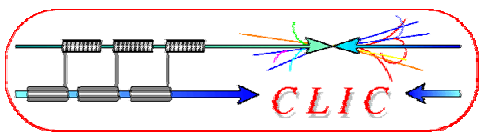
 - nature of a test facility
 - evolution of CTF3 over the coming years
- => very **diverse operation**



Shut-down Tasks



- participate in **hardware** developments
- participate in **software** developments
 - CTF3 specific high-level application programs
 - implement CTF3 specific hardware in the control system
 - support for 30 GHz test stand
 - application programs
 - control systems implementation
 - data acquisition system
 - general support for CTF3



WP 8 Requirements



• **Time schedule:** **up to 2010**

• **Resource estimate:** **25 man-years**

1 CTF3 operator

5 people over 5 years

for CTF3 full-time operation

0.5 MCHF

**equipment for operation,
consumables, additional
replacement parts and
maintenance**