Future Planning Environment

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NOT

Scientific Strategy 1989 - 1997

Goals for the initial period of operation were:

- Largest possible range of science
- Widest possible range of instruments
- Largest possible number of users
- Slice projects to keep max. # of applicants happy
- Stick close to national budget quotas if feasible

  (Budget shares: DK:FI:NO:SE = 20:30:20:30%)

Scientific Strategy 1997 - 2004

Goals for the more mature period were:

- Focus on most competitive NOT science
- Emphasise synergy with ESO facilities (VLT+)
- Rank applications based on publication record
- Successful projects awarded 100% of request
- MOSCA, NOTCam, FIES commissioned
- Follow national budget quotas only loosely

(Budget shares: DK:FI:IS:NO:SE = 20:30:1:20:30%)

Scientific Strategy 2005 - 2012

Goals for the period of focus and specialisation:

- Repeated surveys of most competitive NOT science
- Optimise instrumentation for such projects (FIES)
- Introduce flexible service observing, ToO, monitoring
- Streamline operations, rapid data transfer, archiving
- Introduce Fast-Track proposal & execution option
- Ignore national budget quotas for the moment
- OPTICON TNA support boosting European demand

Scientific Strategy: Outcomes

Results of more focused and specialised operation:

- New kinds of science being done
- Larger overall scientific impact
- Greater international awareness and interest
- Publication rate up by 50-100% (101 in 2011)
- **BUT:** Use far out of sync with national budget quotas

  ⇨ Budget crisis among Associates! ☹

International Context 2000+

Meanwhile, astronomy and Europe have changed:

- ESO VLT now in full operation; ALMA ramping up
- UK, Finland, Spain, Czech Rep, Austria join ESO
- OPTICON pioneers European coordination (TNA++)
- ASTRONET develops comprehensive Roadmap
- ETSRC recommends specialisation, coordination
- Increased pressure from E-ELT, SKA, LSST, CTA…
- European economy going ↘ = more competition!

OPTICON: 5 CTAC semesters

OPTICON TNA Programme 2010B - 2012B (5 CTAC periods)

Telescope	FP7-I Contract		Summary of Access 2010B - 2012B						User Fees	
	min. (nts)	UF (€)	Nprop	Offer	Reqst	Alloc	PFini	Load	Total (€)	%
AAT 3.9m	28.0	9,484	45	50.0	189.0	46.3	3.78	0.93	357,073	29.6
CAHA 3.5m	18.0	8,966	12	12.0	31.5	11.0	2.63	0.92	98,626	8.2
CAHA 2.2m	28.0	3,371	13	34.0	57.0	16.0	1.68	0.47	45,509	3.8
CFHT 3.6m	8.0	14,610	18	23.0	37.2	13.2	1.62	0.57	143,909	11.9
ESO/MPG-2.2m	25.0	2,707	11	43.0	39.0	9.0	0.91	0.21	18,949	1.6
WHT 4.2m	18.0	7,992	12	14.0	21.0	5.0	1.50	0.36	31,968	2.6
INT 2.5m	7.0	1,629	5	44.0	16.0	0.0	0.36	0.00	0	0.0
TNG 3.5m	25.0	6,933	21	34.0	51.5	16.3	1.51	0.48	70,197	5.8
NOT 2.6m	32.0	3,867	59	94.0	251.4	93.3	2.67	0.99	282,805	23.4
OHP 1.9m	50.0	1,756	23	43.0	119.0	41.0	2.77	0.95	53,558	4.4
TBL 2m	32.0	2,563	16	35.0	76.0	20.0	2.17	0.57	44,853	3.7
TCS 0.8m	23.0	2,113	2	25.0	10.0	10.0	0.40	0.40	21,130	1.8
LT 2m (@ 10 h)	15.1	3,760	15	25.0	17.8	11.1	0.71	0.44	38,540	3.2
# proposals			252	476.0	916.4	292.1	1.93	0.56	1,207,115	100.0
Unique prop.			219							
Approved			83					38 %		

⇨ NOT is very competitive!

Scientific Strategy 2013+ (I)

Our response to these changes includes:

- Focus NOT science to transient & variable sources
- Single optical+NIR imager&spectro at main focus
- FIES always on standby (+polarimetry, RV stability)
- Accommodate ToO alerts on ***all*** usable nights
- Revise agreement with the IAC accordingly
- Attract suitable international partners (I + ?)
- Plan for future in five-year periods (not ∞!)
- Ask users to contribute resources, getting GTO

Scientific Strategy 2013+ (II)

Scientific advantages:

- Reasonable planning horizon(s) for both sides
- Incentive to provide optimised instrument(s) - NTE
- Large shares of observing time by contract
- Teams free to include international collaborators

Corresponding 'business model':

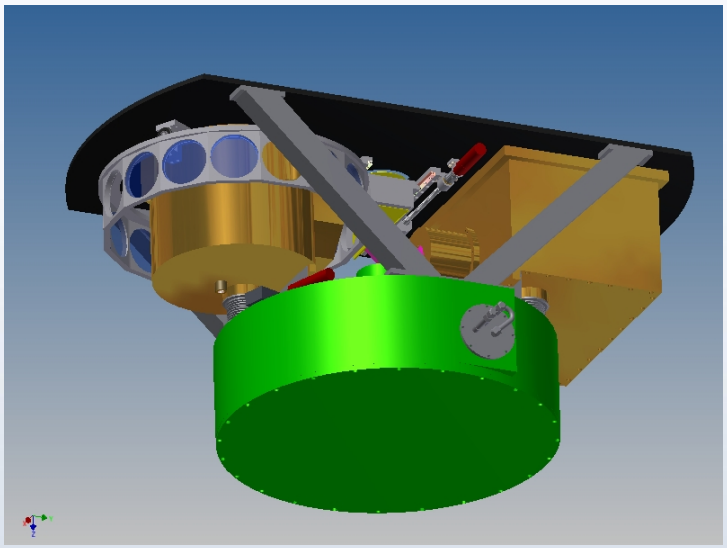
- Associates provide stable basic budget (# € TBD)
- Educational activities funded separately (TBC)
- Users contribute resources (€, FTEs) to get GTO

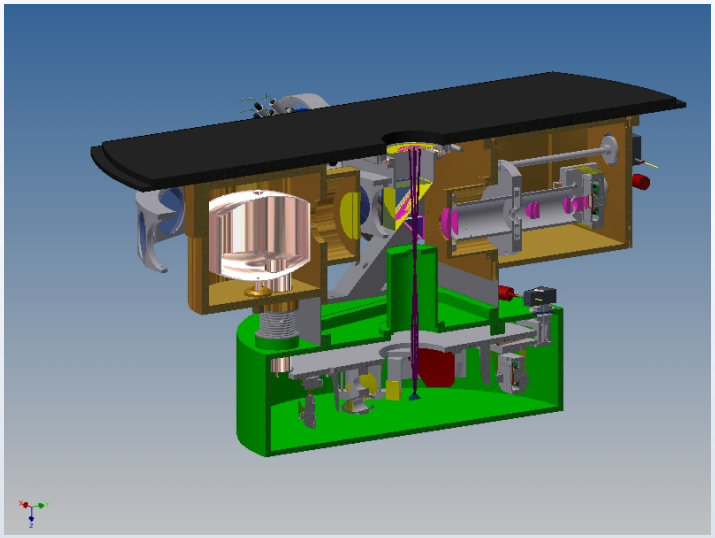
Planned Sequence of Events

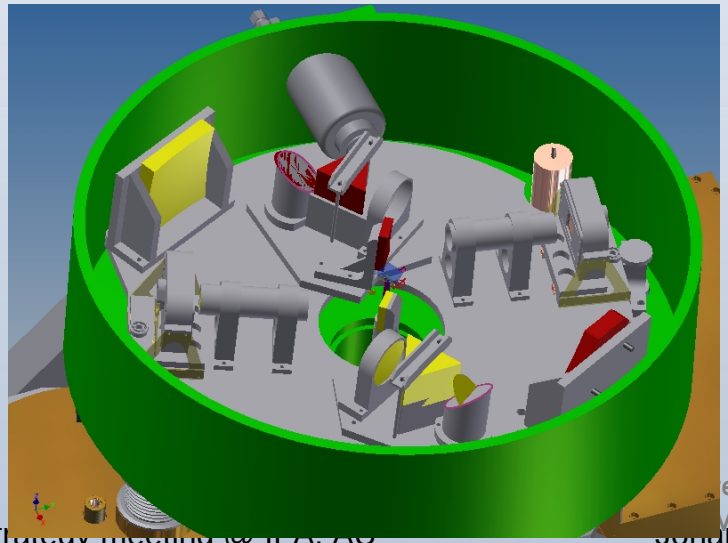
Preparatory actions and schedule for decisions:

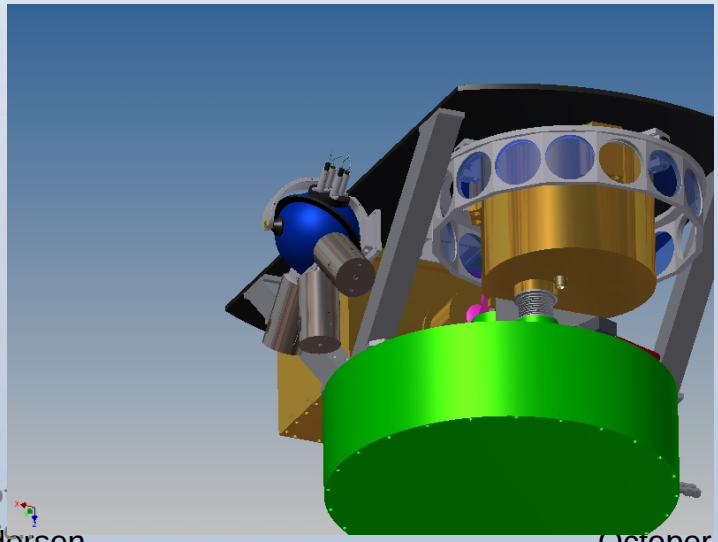
- NTE Phase A Study completed July 1 - ✓
- NTE Phase A review September 24 (positive!) - ✓
- Meeting today to present & coordinate plans - ✓
- AO published ~today - ✓
- Proposal deadline ult. December (TBC) - ✓
- Selection and decision by Council - ~March 2013
- NOTSA Agreement revised to reflect new model
- First five-year period begins 1 January 2014 (TBC)

NTE Preliminary Design

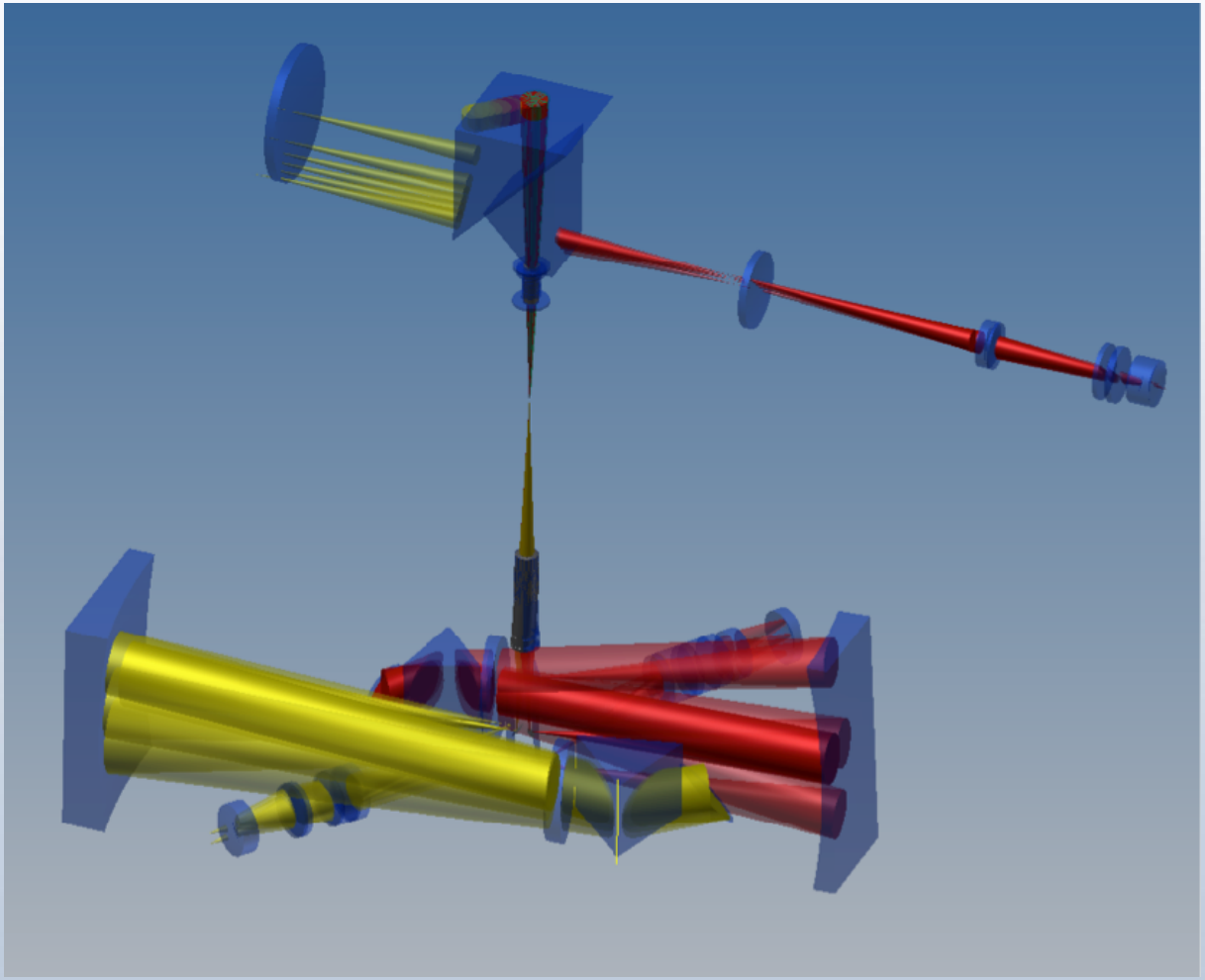








Global optical layout



Comments by Review Panel

Excerpts from review report:

"The panel praised unanimously the work of the NTE Consortium. The study was considered as very interesting and well developed for this phase of the project. […] The panel regarded the science case of the instrument as very strong. "

"The science team includes scientists at the forefront of research worldwide on transient objects. The panel suggested to include in the next phase of the project a few selected programs on stellar astrophysics."

"There was a general consensus in the panel that the instrument concept is sound and feasible. The study identifies a few critical functions […] where different options are available**.** "

"The panel judged the NTE cost estimate reasonable for this stage."

"The review panel encourages the Director to pursue vigorously the project. NTE is for the time being unique among 2-4m class telescopes . […] With the capabilities it could provide in spectroscopy and imaging, it will guarantee results at the forefront of astrophysical research with NOT for at least a decade."

Implementation at NOT:

Actions taken in preparation for first period:

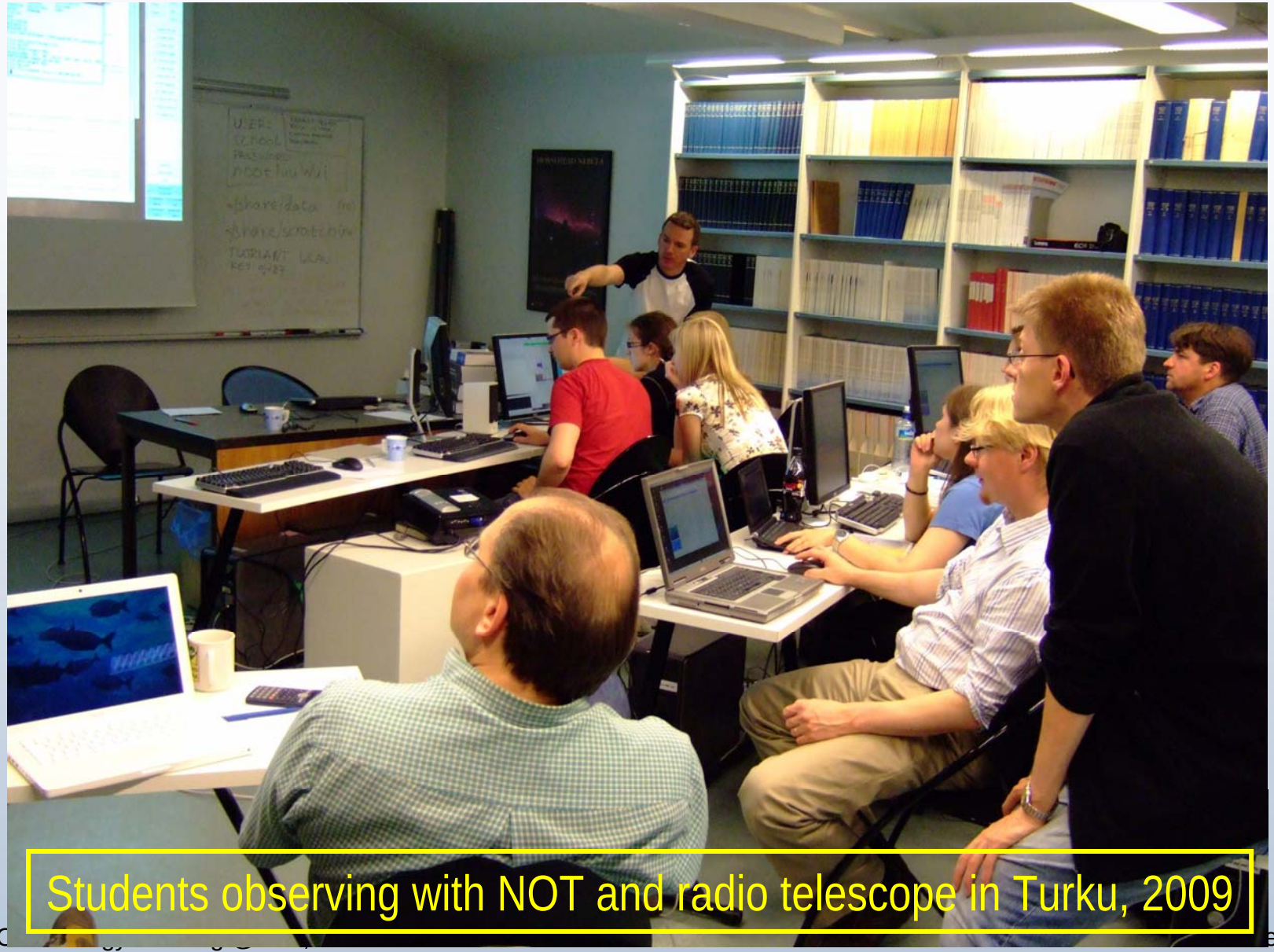
- Implement new NBI CCD controller @ ALFOSC - ✓
- Order new CCDs for FIES & ALFOSC - ✓
- Build new, optimised CCD camera for FIES - ✓
- Speed upgrade of NBI controllers in progress - ✓
- Port NBI controller to NIR arrays - next in line
- Polariser for FIES near final design - install 2013
- Data flow system upgrade & migrate to NTE
- First discussion with new partner(s) - ✓

Training: Research Students

Nordic Research Students 2003 - 2012 (+ many theses)

* Danish

Training for future: Multiwavelength Courses



Students observing with NOT and radio telescope in Turku, 2009