



# WP2: Coordination with the GDE

Nick Walker (for Brian Foster)

25.02.10

CERN

A horizontal dotted line in a light yellow-green color runs across the bottom of the slide, mirroring the one at the top.

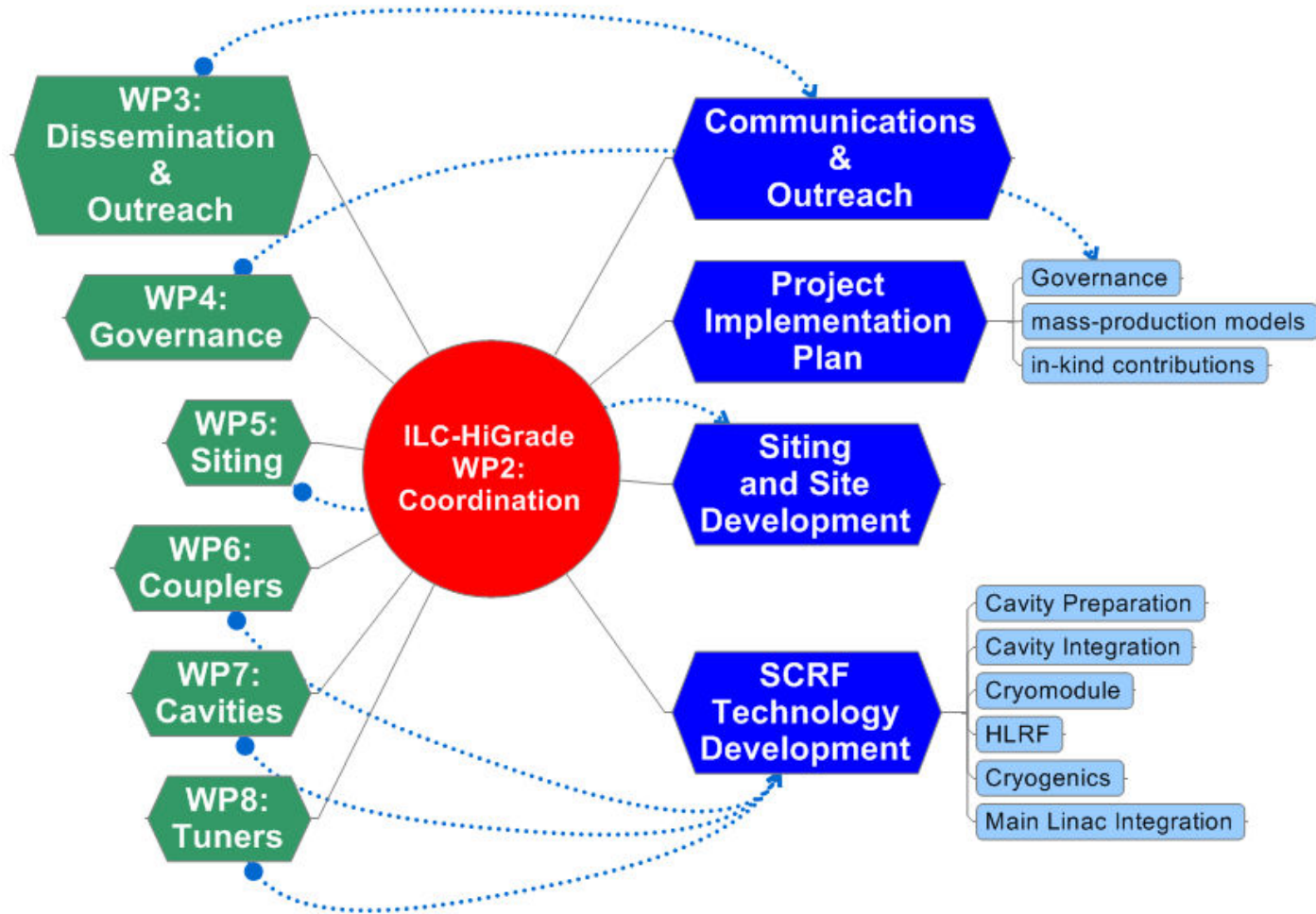


# Global Effort

- The Global Design Effort is responsible for coordinating the world-wide ILC R&D effort
  - Towards publication of the Technical Design Report at the end of 2012
  - Preparation for “Submission for Project Approval”
- Primary GDE deliverables:
  - A Technical description of the proposed ILC in enough detail to support the cost estimate
  - An updated cost estimate, including a construction schedule
  - A project Implementation Plan
- ILC-HiGrade remains naturally integrated into many aspects of the above Global activities

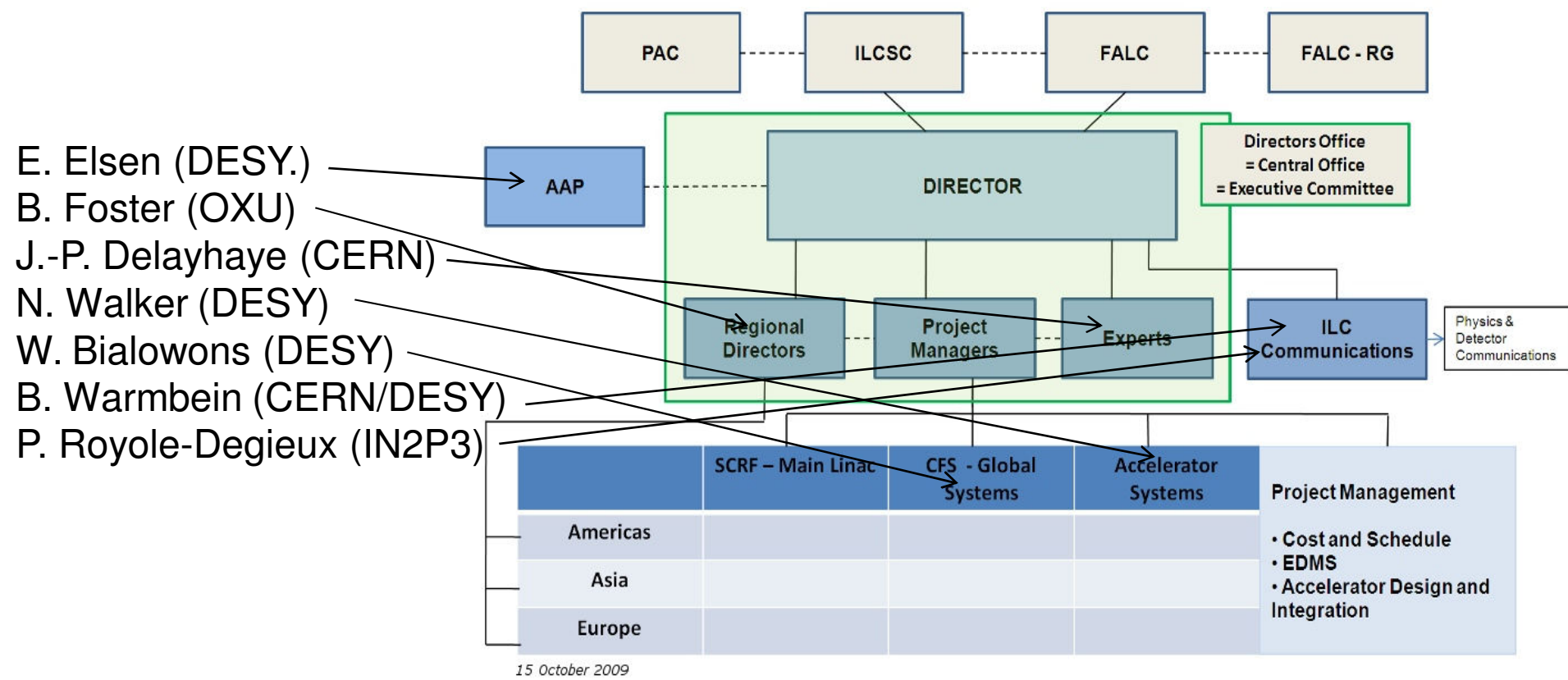


# Coordinating with the GDE





# ILC-GDE Organisation



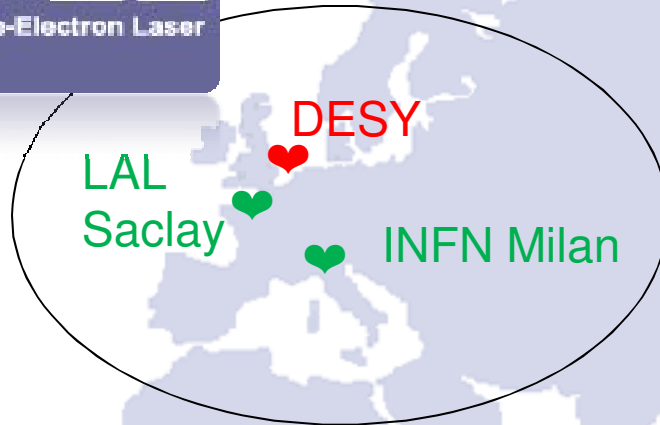
Primary coordination between ILC-HiGrade and GDE



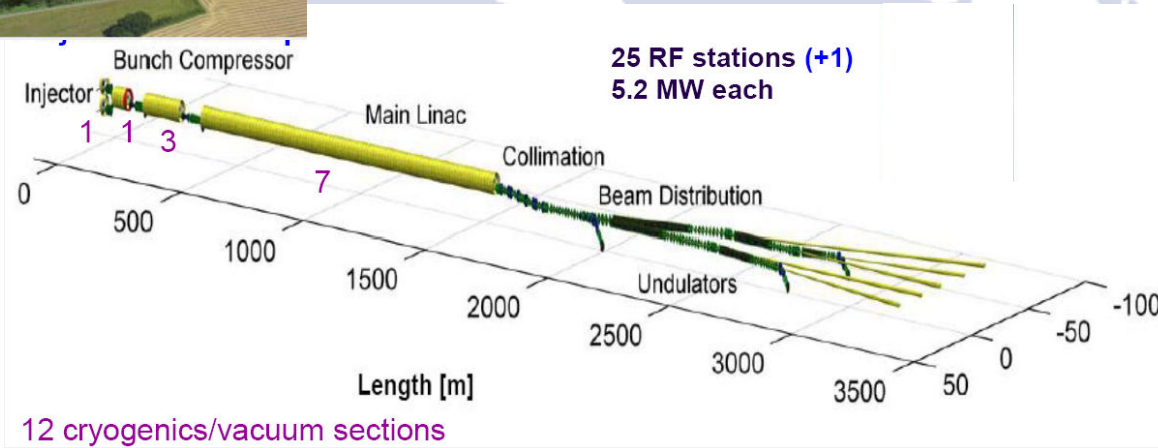
# European XFEL



**XFEL**  
X-Ray Free-Electron Laser



- 101 Cryomodules
- 808 cavities
  - plus auxiliaries
- Gradient:
  - 23.5 MV/m
  - (28 MV/m)
- Industrialisation & mass production
  - 1 CM / week
- “In-kind” international model





# XFEL, ILC-HiGrade & GDE



OXUN  
LAL  
Saclay  
DESY  
CERN  
INFN Milan

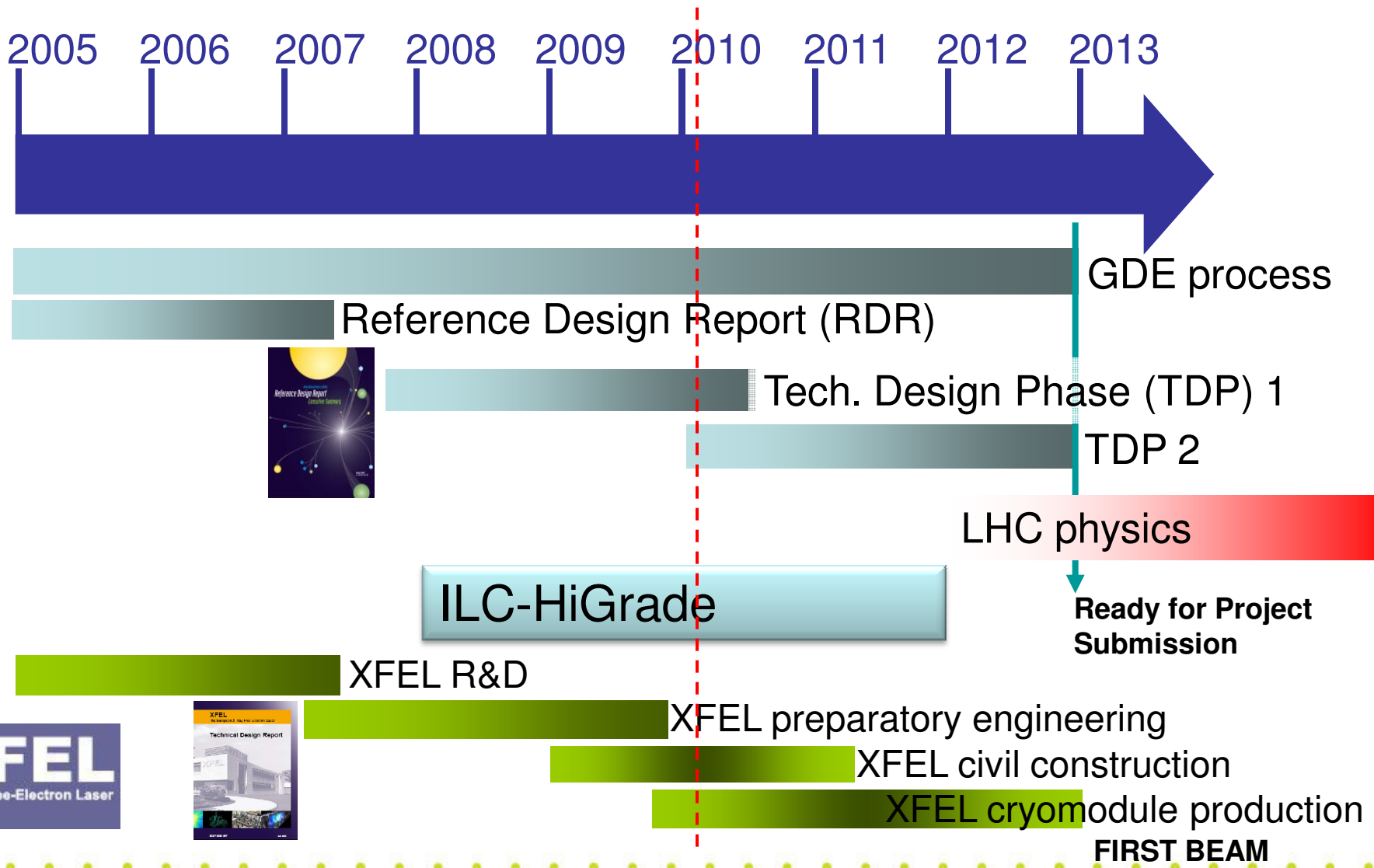
ILC-HiGrade

ILC-Higrade participants reflect strong GDE-XFEL synergy (European strength), and are also active participants in the ILC-GDE

-> Collaboration Remains Strong!



# GDE, ILC-HG and XFEL Timelines





# GDE R&D Plan & ILC-HiGrade



Next update/release June 2010

Major update to reflect refined TD Phase 2 plans

***ILC Research and Development Plan  
for the Technical Design Phase***

Release 4

July 2009

ILC Global Design Effort

Director: Barry Barish





# GDE R&D Plan & ILC-HiGrade



Next update/release June 2010

Major update to reflect refined TD Phase 2 plans

## ILC Research and Development Plan for the Technical Design Phase

Release 4

July 2009

ILC Global Design Effort

ILC HiGrade Cavities are an important European contribution to global SCRF effort

Table 3.2 Projected (and actual) number of SCRF cavity orders in each region.

	Before TDP	2008	2009	2010	TDP1, sum*	2011-2012
Americas (FY)	34	20	40	15	109	~20
Asia (FY)	15	3	18+1**	17+2**	48+3**	>10
Europe (CY)	68	-	26 (+808)***	-	94 (+808)	-
<b>Total</b>	<b>117</b>	<b>23</b>	<b>70 (+808)</b>	<b>34</b>	<b>222 (+808)</b>	<b>&gt;30</b>

\*) to June 2010. \*\*) Japan and China. \*\*\*) 26 specific for ILC-R&D, 808 for XFEL mass production.



# GDE R&D Plan & ILC-HiGrade



Next update/release June 2010

Major update to reflect refined TD Phase 2 plans

## ILC Research and Development Plan for the Technical Design Phase

Release 4

July 2009

ILC Global Design Effort

ILC HiGrade Cavities are an important European contribution to global SCRF effort

Table 3.2 Projected (and actual) number of SCRF cavity orders in each region.

	Before TDP	2008	2009	2010	TDP1, sum*	2011-2012
Americas (FY)	34	20	40	15	109	~20
Asia (FY)	15	3	18+1**	17+2**	48+3**	>10
Europe (CY)	68	-	26 (+808)***	-	94 (+808)	-
<b>Total</b>	<b>117</b>	<b>23</b>	<b>70 (+808)</b>	<b>34</b>	<b>222 (+808)</b>	<b>&gt;30</b>

\*) to June 2010. \*\*) Japan and China. \*\*\*) 26 specific for ILC-R&D, 808 for XFEL mass production.



# Towards TD Phase 2

- Primary TD Phase deliverables:
  - Updated design of the machine
  - Updated VALUE estimate
  - Project Implementation Plan
  - Results and conclusions from worldwide Risk-mitigating R&D
- Phase 1 to Phase 2 ‘transition’
  - Increased emphasis / focus on Design & Cost activities
  - Siting issues (Conventional Facilities), including potential host-sites
  - Documentation!



# Towards TD Phase 2

- Primary TD Phase deliverables:
  - Updated design of the machine
  - Updated VALUE estimate
  - Project Implementation Plan
  - Results and conclusions from worldwide Risk-mitigating R&D
- Phase 1 to Phase 2 'transition'
  - Increased emphasis / focus on Design & Cost activities
  - Siting issues (Conventional Facilities), including potential host-sites
  - Documentation!

ILC-HiGrade  
High-gradient cavity R&D



# Towards TD Phase 2

- Primary TD Phase deliverables:
  - Updated design of the machine
  - Updated VALUE estimate
  - Project Implementation Plan
  - Results and conclusions from worldwide Risk-mitigating R&D
- Phase 1 to Phase 2 'transition'
  - Increased emphasis / focus on activities
  - Siting issues (Conventional Facilities), including potential host-sites
  - Documentation!

ILC-HiGrade  
High-gradient cavity R&D  
Choice of accelerating gradient



# Towards TD Phase 2

- Primary TD Phase deliverables:
  - Updated design of the machine
  - Updated VALUE estimate
  - Project Implementation Plan
  - Results and conclusions from worldwide Risk-mitigating R&D
- Phase 1 to Phase 2 'transition'
  - Increased emphasis / focus on activities
  - Siting issues (Conventional Facility) including potential host-sites
  - Documentation!

ILC-HiGrade  
High-gradient cavity R&D  
Choice of accelerating gradient  
Mass production Q&A



# Towards TD Phase 2

- Primary TD Phase deliverables:
  - Updated design of the machine
  - Updated VALUE estimate
  - Project Implementation Plan
  - Results and conclusions from worldwide Risk-mitigating R&D
- Phase 1 to Phase 2 'transition'
  - Increased emphasis / focus on activities
  - Siting issues (Conventional Facility including potential host-sites)
  - Documentation!

ILC-HiGrade  
High-gradient cavity R&D  
Choice of accelerating gradient  
Mass production Q&A  
Siting & Governance



# Coordination requires Communication

- GDE (and *ILC-HiGrade!*) is a worldwide (European) distributed collaboration
- Physics meetings (workshops) remain critical for progress
  - And team building!
- However, organisation, travel etc. is a burden
  - GDE has now dropped from 3 to 2 workshops per year
- Primary (weekly) contact remains remote conferencing





# Coordination with the Physics & Detector Community

- GDE is responsible for development and cost of the machine
- Detector & Physics community is a 'separate entity'
- Better coordination and communication is required between the two communities
  - Critically important as design and cost decisions are made in TD Phase 2
- Methods to improve (formalise) coordination are currently being discussed

- *ILC-HiGrade* **remains** well integrated into the Global Design Effort
  - Significant overlap of senior people
  - ILC-HG WP structure complements GDE activities and goals
- Preparation for cavity mass-production (Q&A) is now central focus of GDE
  - *ILC-HiGrade* (together with European XFEL) provides leadership input
- Technical Design Phase shift in emphasis (away from R&D) will **strengthen importance** of *ILC-HiGrade* activities
  - Cavity mass-production & cost
  - Siting
  - Governance