The Current SNOLAB Strategic Plan

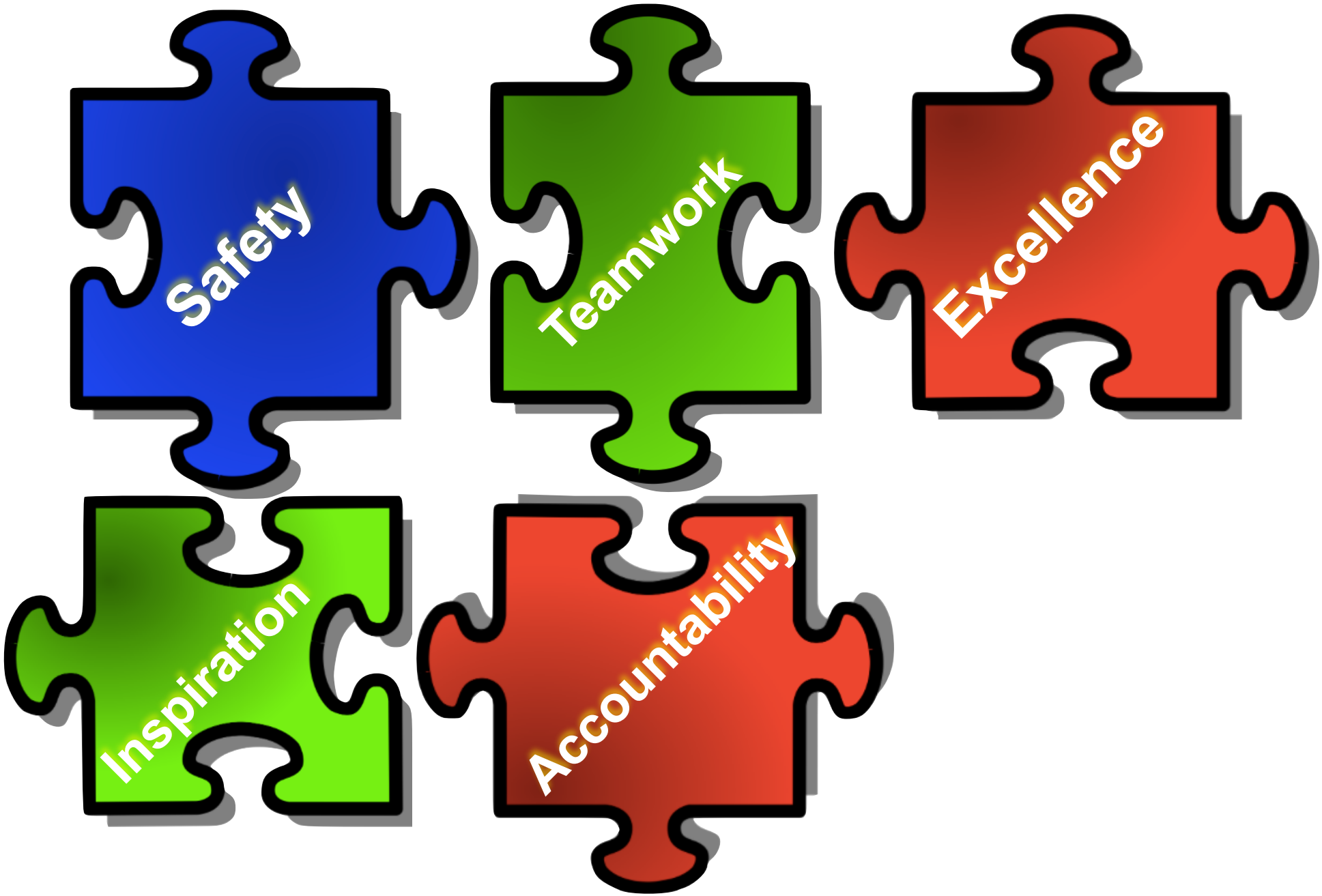
Nigel Smith

SNOLAB Strategic Plan 2012-2017

SNOLAB Vision

"To be the location and partner of choice for deep underground science, delivering world-class science and benefit to Canada, and her international partners, by providing and promoting national and international access to the unique facilities and expertise at SNOLAB."

SNOLAB Core Values



SNOLAB Mission Statement

- Enable world-class science to be performed at SNOLAB by national and international experimental collaborations, providing scientific underpin, technical skills and knowledge, generating and developing international connections, and through development of a strong reputation;
- Spearhead world-class science at SNOLAB through its own research group as part of the international and national community, developing synergies with other groups worldwide;
- Catalyse world-class science at SNOLAB by providing a sought after collaborator in its own right and through providing transformational opportunities for collaboration and knowledge exchange to other groups through workshops, external connections and local interactions;
- Promote world-class science and societal benefits through a strong public and professional outreach programme, and through technical knowledge development and transfer;
- Inspire the next generation of innovators through strong educational outreach, knowledge transfer and the training of highly qualified personnel;

SNOLAB Strategic Goals

- Enable and spearhead world-class underground science

  To ensure SNOLAB supports, maintains and executes a world-class research programme, and plays its own significant role in the shaping and delivery of the science.

- Develop and maintain world-class facilities and infrastructure

  To ensure SNOLAB remains at the forefront of infrastructure provision for underground science.

- Educate, inspire and innovate

  To develop broad economic impact to Canada and our surrounding region by educating and inspiring through both public and professional outreach, developing highly qualified personnel and delivering innovative solutions through the use of small and medium scale enterprises.

- Develop delivery systems of internationally recognised standard

  To develop SNOLAB internal quality management and delivery processes, and the connections to the experiments, through internationally recognised practices and processes to ensure efficient and effective management of resources and exemplary safety standards.

In case you forget!

Strategic Planning Process

- Next Strategic Plan will need to be in place for 2017-2022
  - Deadline end September, 2016
- Community input process
  - Web-Based survey (Hiro to discuss)
  - This Town Hall
  - Steering group to develop an ‘input report’
- Consultant retained to develop Plan
  - Will take input from Board members directly
  - Input from community
  - Input from SNOLAB
- Develop Plan over the next couple of months
  - Iterates with Board, community group, SNOLAB.

Community Input Steering Group

Member	Institute	Representative of
Hiro Tanaka (Chair)	University of Toronto	Physics community
Isabelle Blain	Formally NSERC VP	External stakeholders
Cliff Burgess	Perimeter Institute	Theory community
Doug Boreham	Laurentian / NOSM	Genomics community
Gabriel Orebi Gann	Berkeley University	Physics community (international)
Christine Kraus	Laurentian University	Local community
Aksel Hallin	University of Alberta	SNOLAB Board
Reiner Kruecken	TRIUMF	National facilities
Tony Noble	Queen's University	CFREF
Jocelyn Munroe	Royal Holloway, London	Physics community (inetrnational)
Isabel Trigger	TRIUMF	SNOLAB EAC
Nigel Smith (ex officio)	SNOLAB	
Blaire Flynn (ex officio)	SNOLAB	
Sonya Shorey	Consultant	

The SNOLAB Strategic Plan Steering Committee is asked to:

- engage, and solicit input to the Strategic Plan from, the SNOLAB scientific community;
- distil the community input into a coherent view, presented to the SNOLAB Director as a 'community input report';
- inform the construction of the Strategic Plan to ensure the community view is fulfilled.

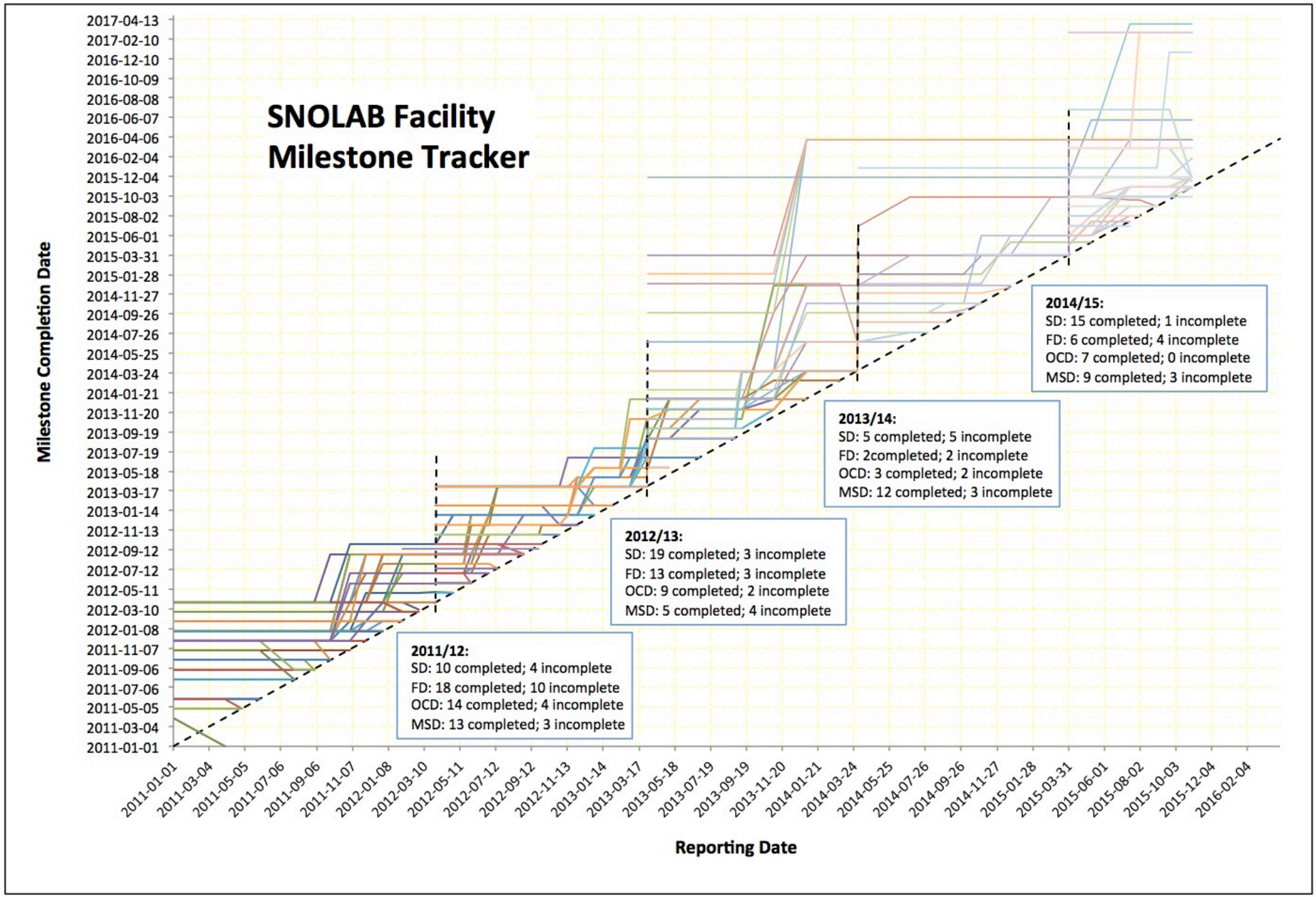
Performance of SNOLAB against Strategic Plan

Nigel Smith

SNOLAB Facility Business Plan

- The Facility Business Plan is a ‘living-document’
  - As are the facility risk and hazard registers
  - Updated regularly, components approved annually by the Board
- Formal components
  - Agreed delivery milestones against each strategic goal
    - Provide mechanism for Board oversight on delivery of Strategic and Business Plans
  - Board approves, following A&F Committee recommendations:
    - Risk and hazard management plan (this is reviewed each meeting)
    - Finance and budget development
    - Staff development plan
- Example: Science versus facility development prioritisation
  - Connects Strategic Plan to operations within facility
  - Defines tactical priorities, which defines resource allocation
  - Provides transparent process for management

Quality Performance



Enable and spearhead world-class underground science

- Substantial progress on construction of projects over the Plan timescale
  - Imminent physics data taking for DEAP/MiniCLEAN
  - SNO+ LAB process plant close to operation; Te plants being specified
  - SNO+ water-filling again, data taking
  - PICASSO relocated, operated, decommissioned, world-leading results
  - COUPP/PICO arrived, installed, operated, new world-leading results
  - DAMIC appeared, constructed, operating, new results
  - HALO main construction finished and now live
  - SuperCDMS selected for G2; CUTE development underway
  - NEWS specification well advanced
- Initial science programme already delivering world-leading results
  - PICASSO/COUPP/PICO spin-dependent dark matter limits in 2012, 2015, 2016
  - New results from DAMIC
- Broadening of science programme from traditional deep underground science
  - Completion of MODCC infrastructure
  - Genomics operational (REPAIR, Flies in a Mine)

Enable and spearhead world-class underground science

- Fostering collaboration between research teams
  - PICASSO/COUPP
- Engagement of science teams through SEF, Users groups
  - Major projects fortnightly or weekly meetings
  - Strengthened process for SEF
- Strengthened oversight of programme by Experiment Advisory Committee
  - Meets twice yearly
  - Updates to Board of Directors (when requested)
  - Recommendations tracked and monitored between meetings

Currently Science programme

Experiment	Neutrino	Dark Matter	Other	Space allocated	Status
COUPP-4		√		"J"-Drift	Completed
CUTE		√	Test Facility	Ladder Labs	In Preparation
DAMIC		√		"J"-Drift	Operational
DEAP-1		√		"J"-Drift	Completed
DEAP-3600		√		Cube Hall	Commissioning
DEAP-50T/CLEAN		√		Cube Hall	Letter of Intent
DMTPC		√		Ladder Labs	In Preparation
DUST			Test Facility	Ladder Labs	Letter of Intent
Flies in a Mine			Genomics	External Drifts	Operational
Ge-1T	√			Cryopit	Letter of Intent
nEXO	√			Cryopit	Concept Phase
nEXO Shield	√			Cryopit	Letter of Intent
HALO	√			Halo Stub	Operational
MiniCLEAN		√		Cube Hall	In Construction
MODCC			Mining Data Centre	Surface Facility	Operational
NEWS		√		Cube Hall	In Preparation
PICASSO-III		√		Ladders Labs	Completed
PICO-2L		√		"J"-Drift	Operational
PICO-60		√		Ladder Labs	Operational
PICO-500		√		Ladder Labs	Letter of Intent
PUPS			Seismicity	Various	Completed
SNO+	√			SNO Cavern	In Construction
SuperCDMS		√		Ladder Labs	In Preparation
REPAIR			Genomics	Chem Labs	Operational

Strategic Plan CSF

- Engage with the SNOLAB Experiments Forum to determine the level of ‘user satisfaction’ with the science delivery at SNOLAB;

- Maintain metrics associated with facility planning and milestone delivery for experimental infrastructure – such as number, timescale and quality;

- Maintain metrics associated with the user base size, science programme delivery through programme size, cost and impact, space and resource utilisation and outreach engagement metrics

Key Performance Indicators

SNOLAB KPI Data Plan 2015.3 (2015-09-22)

	Indicator	Performance				
		2011	2012	2013	2014	2015
Business Development	Number Of Users	🟢	🟢	🟢	🟢	0
	Number Of Highly Qualified Personnel	🟢	🟢	🟢	🟢	0
	Number of Graduated Students	-	🟢	🟢	🟡	0
	Total SNOLAB Employees	🟢	🟡	🟢	🟢	0
	Number of Scientific Contributions	🟢	🟢	🟡	🟡	0
Technical Contributions	Patents Filed	-	🟢	🟢	-	-
	Spin Offs	-	-	-	-	-
	Networking Meetings On Economic/Commercialisation	-	🟡	🟡	🟡	0
Level of Use	Number of Projects	🟢	🟢	🟢	🟢	0
	Programme value	-	🟢	🟢	🟢	0
	Underground Visits – Staff	-	🟡	🟡	🟡	0
	Underground Visits – Users	-	🟢	🟢	🟢	0
	Underground Visits – Visitors	🟢	🟢	🟢	🟢	0
Reliability and Service	Percentage of Experiment-Related Deliverables Met by SNOLAB Within Agreed Timescales	🟢	🟢	🟡	🟢	0
	Number of Corrective Actions	-	🟢	🟡	🟢	0
	Percentage Corrective Actions Closed Within Prescribed Timelines	-	🟡	🟡	🔴	0
	Number Of Shifts Lost Due To Events Within SNOLAB Control	-	🟢	🟢	🟢	0
	Number Of Shifts Lost Due To Events Outwith SNOLAB Control	🟢	🟢	🔴	🟡	0
Physical Safety	Number of Lost Time Injuries (LTI)	🟢	🟢	🟡	🟡	0
	Lost Time Injury Frequency (LTIF)	🟢	🟢	🟡	🟡	0
	Number Injuries and Illnesses Reported	🟢	🟢	🟡	🟢	0
	Number of Incidents Reports, including Near Miss	🟢	🟢	🟢	🟢	0
Programme and Staff Development	Number Workshops/Meetings Held At SNOLAB or Sponsored	🟢	🟢	🟢	🟢	0
	Number Of Professional Presentations from SNOLAB Staff	🟢	🟢	🟢	🟢	0
	Number of High Esteem Engagements by SNOLAB Staff	🟢	🟢	🟢	🟢	0
	Number Of New Partnerships/ MOUs	-	🟢	🟡	🟡	0
	Number of New Projects	🟢	🟢	🟢	🟢	0
	Expressions of Interest	🟢	🟢	🟢	🟢	0
	Person Days Of Training	-	🟢	🟢	🟢	0

- Metrics gathered for the SNOLAB Board and funding agencies
  - Business Development
  - Technical Contributions
  - Level of Use
  - Reliability and Service
  - Physical Safety
  - Programme/Staff Development
- High targets set by Board
  - Aim to stretch organisation
- A traffic-light ‘dashboard’ used for visual assessment
  - Predominantly green

Develop and maintain world-class facilities and infrastructure

- Substantial projects completed
  - Underground facility now contiguous and operational
  - Life safety systems throughout occupied areas
  - ***Lots*** of experiment support infrastructure completed
  - Underground machine shop
  - Emergency systems throughout lab and external drifts
  - Surface capabilities: car park, storage
  - Third floor refurbishment completed (MODCC)
  - IT systems upgrades: fibre run, new telecomms
- To support experiment infrastructure, some projects deferred:
  - South drift refurbishment to allow occupation by SNO+
  - Low background counting lab now split into two phases (HPGe / Rest)
  - Bio/Chemical lab underground deferred
  - Shotcreting secondary access routes (will develop semi-clean storage)

Strategic Plan CSF

- Determine, through the SNOLAB Experiments Forum, the level of ‘user satisfaction’ with the facilities at SNOLAB;

- Maintain metrics associated with facility planning and milestone delivery for experimental infrastructure, including rapid development R&D and prototyping projects – such as number, timescale and quality;

- Assess the usage of the SNOLAB facility infrastructures by maintaining metrics on the space utilisation at SNOLAB, the level of interest through letters of intent and approaches, and the scale of the user community.

HQP Training

- HQP: does not include academics
- Shows the number of people trained to work underground at SNOLAB (done through NorCAT and local site specific)
- Grey boxes illustrate HQP in our community from collaboration author data
- Substantial increase in HQP over StratPlan period: most Canadian HQP trained to go underground

	Number of Canadians							Number of non-Canadians						
	2011	2012/ 2013	2013/ 2014	2014	2014/ 2015	2015/ 2016	2016/ 2017	2011	2012/ 2013	2013/ 2014	2014	2014/ 2015	2015/ 2016	2016/ 2017
Undergraduates	-	36	31	50	51	40	40	-	5	5	14	8	5	5
Masters students	-	13	16	16	43	30	30	-	1	6	26	11	5	5
PhD students	27*	9	7	17	9	10	10	16*	13	26	59	24	25	25
Postdoc Fellow / Research Fellow	31	8	15	31	25	30	30	32	29	24	50	14	20	20
Technicians	58	53	74	63	98	100	100	20	2	1	41	2	5	5
Others (Contractor)	-	21	19	15	7	5	5	-	0	0	0	0	0	0
TOTAL	89	140	162	192	233	215	215	52	50	62	190	59	60	60

Underground visits

- Underground visits by category
  - SNOLAB Staff
  - Facility Users and Contractors
  - Visitors (inc. untrained users)
- Steady increase from 2011/12, almost to double number of shifts
- All driven by increase in user (and visitor) shifts
  - Illustration of “enhanced capacity for innovation”
- Supporting 3x the user visits in 2011/12 with ~similar staff support

	2011/12	2012/13	2013/14	2014/15	2015/16
Staff	5000	5369	5172	4868	4900
Users	1400	2384	4371	4531	4864
Visitors	509	984	1001	1003	964
TOTAL	**6909**	**8737**	**10544**	**10401**	**10748**

Educate, inspire and innovate

- Multiple media interactions
  - Huge impact from Nobel Prize
  - PBS news-hour, BBC, CTV, CBC, Globe and Mail, Toronto Star, ...
  - Grand Opening 17th May 2012, Stephen Hawking visit Sept. 2012
- Social media / web: VR walkthrough; TwitterBook;
- Connection to local community though local organisations, support for educational events, etc.
- SNOLAB within Ontario high school curriculum
  - Info packs to Northern Ontario schools (~1000 students/yr)
- Development with Science North (local science centre) on models & exhibits
  - Science North CEO on SNOLAB Board
  - Award winning object theatre seen by 12,300 visitors in first 18 months
  - New SNOLAB model and displays
    - Science North access ~125,000/yr
  - Cloud chamber (with Sudbury City / L.U.)
- Educational connections through Universities, Perimeter Institute (annual ISSYP tour to SNOLAB), Deep River Science Academy, CAP, Teachers' workshops, etc.

Strategic Plan CSF

- Maintain metrics associated with outreach opportunities, such as the scale and breadth of the engaged audience, the number of events and workshops;
- Maintain metrics associated with highly qualified personnel, such as student numbers, academic progression, awards, fellowships, keynote and conference organisation;
- Develop new linkages to the local mining innovation community, and maintain metrics of direct economic impact to the region.

Develop delivery systems of internationally recognised standard

- Community engagement
  - EAC, SEF and Users groups development
  - Future projects planning processes
- Environment, Health and Safety
  - Ongoing development of best practices
  - Hazard management overhauled
  - Emergency response refined (policies in final draft)
  - MSDS/Chemical programmes completely overhauled
- Quality Management
  - Developing robust quality systems aiming for OSHA and ISO accreditation
  - Document control now managed through Docushare (almost 500 policies loaded in last two years)
  - Non-conformance management system in place
- Financial Management
  - Transition from Quicken to AccPac completed
  - Transfers to more robust audit capability
  - Allows distribution of budgets and financial authority
- Procurement process
  - RecLogic procurement and logistics package implemented; final integration into processes underway
- Human Resource process
  - Sage HRIS system installed; implementation underway
  - Training methodology
  - User information and training management
- New IT services (zimbra, shift reports, PI, etc.)

Strategic Plan CSF

- Reconstruction of the financial and budgetary control by summer 2011;

- Complete all experiment MoU and agreements for the current programme and have them in place by the end of 2011;

- Ensure experiment Project Implementation Plans are completed on a timescale commensurate with deployment and, for the currently deployed projects, ensure required components are in place by the time of readiness reviews;

- Achieve ISO9001 and OSHA18001 accreditation by the end of 2013.

Current OrgChart

SNOLAB On-site Organisational Diagram
SL-MCS-LED-10-001-P Rev 53 (March 2016)

Functional and line management organisational chart, job titles descriptive.

Governance Structures

- SNOLABI Committees: Audit/Finance, Governance, Science/Technical
- SNOLAB Institute Council — Chair: R Wang
- SNOLAB Institute Board — Chair: P Sinervo

SNOLAB Director — N. Smith

SNOLAB Committees: Experiment Advisory, SNOLAB Experiment

Additional Assignments

- **Laboratory Response Coordinators:** liaise with Vale, primary emergency contact & response, knowledge and veto on underground activities
- **GLIMOS:** experiment contact for health and safety, ensure personnel trained and competent, ensure P.I.P. in place
- **Surface Laboratory Manager:** co-ordination and management of activity and space within the surface laboratories (R. Ford)
- **Cleanliness Coordinator:** management and oversight of activities related to lab cleanliness (C. Jillings)
- **FIPPA Coordinator:** Freedom of Information and Privacy of Personal Information contact (K. Galipeau)

Joint Health and Safety Committee

Management Reps: R. Ford, T. Carrier, I. Lawson
Worker Reps: N. Brown, C. Beaudoin, B. Laurin

Associate Director Programme Development & Science — F. Duncan

Engineering Office — K. McFarlane
- *Design Engineers*: O. Li, P. Liimatainen
- *Draughtsperson*: S. Stankiewicz

Analytical Services — R. Ford
- *Laboratory Technologist*: L. Anselmo, D. Fabris, S. Maguire (BNL)

Research Group
- *Research Scientists*: K. Clark, B. Cleveland, R. Ford, C. Jillings, I. Lawson
- *Post-Docs / Students*: B. Hreljac, H. Patel, E. Nasedkin

Projects Office — B. Morissette
- *Project Managers & Co-ordinators*: K. Loken, M. Obaid, T. Shantz

Local / Long-term Visiting Researchers

J. Farine (LU)	D. Hallman (LU)
C. Kraus (LU	U. Wichoski (LU)
C. Virtue (LU)	D. Braid (LU)
D. Chauhan (LU)	O. Chekvorits (LU)
T. Pollman (LU)	E. Caden (LU)
P. Rost (LU)	M. Askins (UCD)
J. DiGioseffo (QU)	M. Ward (QU/CU)
P. Gorel (UoA)	A. Bialek (UoA)
C. Krauss (UoA)	B. Beltran (UoA)

Experiment Project Managers
- SNO+ — M. Hodak
  - *SNO+ Process Plant Commissioning*: P. Larochelle, S. Back, A. Doxtator, A. Mathewson, A. Stripay (C)
- Experiment PM / Supervisors: T. Flower (DEAP), D. Horne (SNO+)

Core Services — B. Donnelly
- *Training*: N. Brown
- *HRIS*: C. Laverdière
- *Purchasing*: J. Young
- *User Support*: N. Brown, C. Laverdière, J. Young

Experiment GLIMOS

DAMIC: I. Lawson
DEAP: C. Jillings
HALO: C. Virtue
MiniCLEAN: S. Linden
PICO: I. Lawson
SNO+ Process: R. Ford
SNO+ Expt: C. Kraus

Strategic Risk Management
- *Health & Safety*: J. Waite, E. Etienne
- *Finance*: N. Mackenzie, E. Gareau
- *Planning/Q.A*: K. Galipeau
- *Comms & Outreach*: S. Kuula, B. Flynn
- *H. R.*: B. Donnelly

Safety Officers

Xray: C. Jillings
Radiation: I. Lawson
Lasers: I. Lawson
Chemical: R. Ford
Haz. Waste: R. Ford

IT Group — C. Jillings
- Planner / Supervisor: G. Shayer
- *Computer Technologists*: J. Roberts, J. Reynolds

Associate Director Programme Integration & Operations — *(interim S. Hahn)*

Operations — A. Barr
- Planners / Supervisors: T. Carrier, N. Gagnon
- *Mechanical Maintainers*: G. Bisaillon, L. Bonany, C. Peplinski
- *System Operators*: A. Campbell, S. Clark, S. Volckmann
- *Operators*: K. Beaulieu, K. Kean
- *Industrial Technicians*: C. Beaudoin
- *Surface Building Maintenance*: R. Deguire (C)

Integration — L. Oman
- Planners / Supervisors: G. Bellehumeur, B. Oxley
- *Cleaners*: J. Corrigan, A. Grylls, S. Manfred, S. McBride, C. Sheffield
- *Cleaner Maintainers*: B. Laurin, J. Montpellier, C. Ockenden
- *Warehouse*: S. Wickens
- *Industrial Technologists*: R. Abercrombie, A. Byrnes, J. Cooper, N. Fitchett, D. Gagnon, M. Hood, A. Lane, R. Michaud, C. Oberholzer, D. Purdie, K. Purdie, K. Risto

Governance Structures

- Original SNO governance structure evolved from an international collaboration working on an experiment towards a multi-project facility
- New Constitution came into effect February 1st, 2013
- New governance structure based on a more corporate model, in readiness for incorporation as a not-for-profit
  - Institute Council
    - Appoints Board of Directors
    - Comprises representatives of the five Canadian University trustees
    - Incumbent chair: Rui Wang (Laurentian)
    - Meets bi-annually
  - Board of Directors
    - Appoints Executive Director
    - Thirteen member Board to ensure independence (5 University; Vale; 7 independents)
    - Incumbent Chair: Ken Peach (University of Oxford)
    - Meets at least quarterly
    - Annual strategic planning retreat at SNOLAB
  - Subcommittees: Finance and Audit, Governance, Science and Technical review

Risk and Hazard Analyses

- Project risk register maintained by SNOLAB
  - Monthly review and re-evaluation with Risk Group
  - Guides SNOLAB high priority work
  - Updates to Board meeting quarterly
- Extensive facility hazard framework developed
  - Task Hazards: completed for specific tasks that are deemed high risk by supervisors, users, managers or staff
  - Job Hazards: what hazards are each job holder exposed to? (Underway)
  - Area Hazards: what unique hazards are people exposed to within a specific area of the facility
  - Experiment Hazards: what hazards do the experiments introduce?
- Facility Hazard Register: compilation of hazards within the facility across broad categories

IIR Statistics

2014 Statistics

	Severity						
Category	Death	Critical Injury	SNOLAB Lost Time*	Medical Aid	First Aid	No Injury	Totals
Illness, blocked ear, fainting	0	1	0	3	2	7	**13**
Injured while handling, lifting or carrying	0	0	1	2	0	0	**3**
Exposure to, or contact with, a harmful su	0	0	0	0	0	1	**1**
Repetative strain, ergonomics	0	0	0	0	0	1	**1**
Strike against something fixed or stationa	0	0	0	0	0	4	**4**
Struck by moving, including flying/falling,	0	0	0	0	1	1	**2**
Sharp object or tool	0	0	0	2	2	0	**4**
Other kind of accident	0	0	0	0	0	6	**6**
Failure to follow procedures	0	0	0	0	0	21	**21**
Other issue	0	0	1	0	0	12	**13**
Slips, trips or falls on same level	0	0	0	1	2	3	**6**
Drowning or asphyxiation	0	0	0	0	0	0	**0**
Exposure to fire, heat or cryogen	0	0	0	0	0	0	**0**
Contact with electricity or electrical discha	0	0	0	0	0	1	**1**
Exposure to an explosion	0	0	0	0	0	0	**0**
Struck by moving vehicle	0	0	0	0	0	0	**0**
Trapped by something collapsing/overturn	0	0	0	0	0	0	**0**
Acts of violence	0	0	0	0	0	0	**0**
Contact with moving machinery	0	0	0	0	0	0	**0**
Falls from a height	0	0	0	0	0	0	**0**
Injured by an animal	0	0	0	0	0	0	**0**
Totals	0	1	2	8	7	57	**75**

IIR Statistics

2015 Statistics

	Severity						
Category	Death	Critical Injury	SNOLAB Lost Time*	Medical Aid	First Aid	No Injury	Totals
Illness, blocked ear, fainting	0	0	0	2	2	7	**11**
Injured while handling, lifting or carrying	0	0	1	0	0	1	**2**
Exposure to, or contact with, a harmful su	0	0	0	0	0	0	**0**
Repetative strain, ergonomics	0	0	0	1	0	2	**3**
Strike against something fixed or stationa	0	0	0	0	1	5	**6**
Struck by moving, including flying/falling,	0	0	0	1	0	5	**6**
Sharp object or tool	0	0	0	0	5	7	**12**
Other kind of accident	0	0	0	0	0	1	**1**
Failure to follow procedures	0	0	0	0	0	26	**26**
Other issue	0	0	0	0	0	48	**48**
Slips, trips or falls on same level	0	0	0	0	0	5	**5**
Drowning or asphyxiation	0	0	0	0	0	0	**0**
Exposure to fire, heat or cryogen	0	0	0	0	0	1	**1**
Contact with electricity or electrical discha	0	0	0	0	0	1	**1**
Exposure to an explosion	0	0	0	0	0	1	**1**
Struck by moving vehicle	0	0	0	0	0	0	**0**
Trapped by something collapsing/overturr	0	0	0	0	0	0	**0**
Acts of violence	0	0	0	0	0	0	**0**
Contact with moving machinery	0	0	0	0	0	0	**0**
Falls from a height	0	0	0	0	2	0	**2**
Injured by an animal	0	0	0	0	0	0	**0**
Totals	0	0	1	4	10	110	**125**

Global Positioning

- Significant effort on promoting SNOLAB within the national and international communities
  - Conference and workshop talks
  - Inclusion of communities in SNOLAB events
  - Engagement with international funding agencies
    - especially U.S. Department of Energy and NSF
    - hosted Global Science Forum Astroparticle Physics International Forum (first facility visit)
  - Engagement with strategic planning groups
    - National and international communities; Facilities;
- Maintenance of Underground Lab Directors' forum
- SNOLAB presented as viable alternative during U.S. DoE review of the requirement for U.S. deep underground programme
- Intention is to position SNOLAB as the location of choice for those projects that require depth and ultra-low background environments

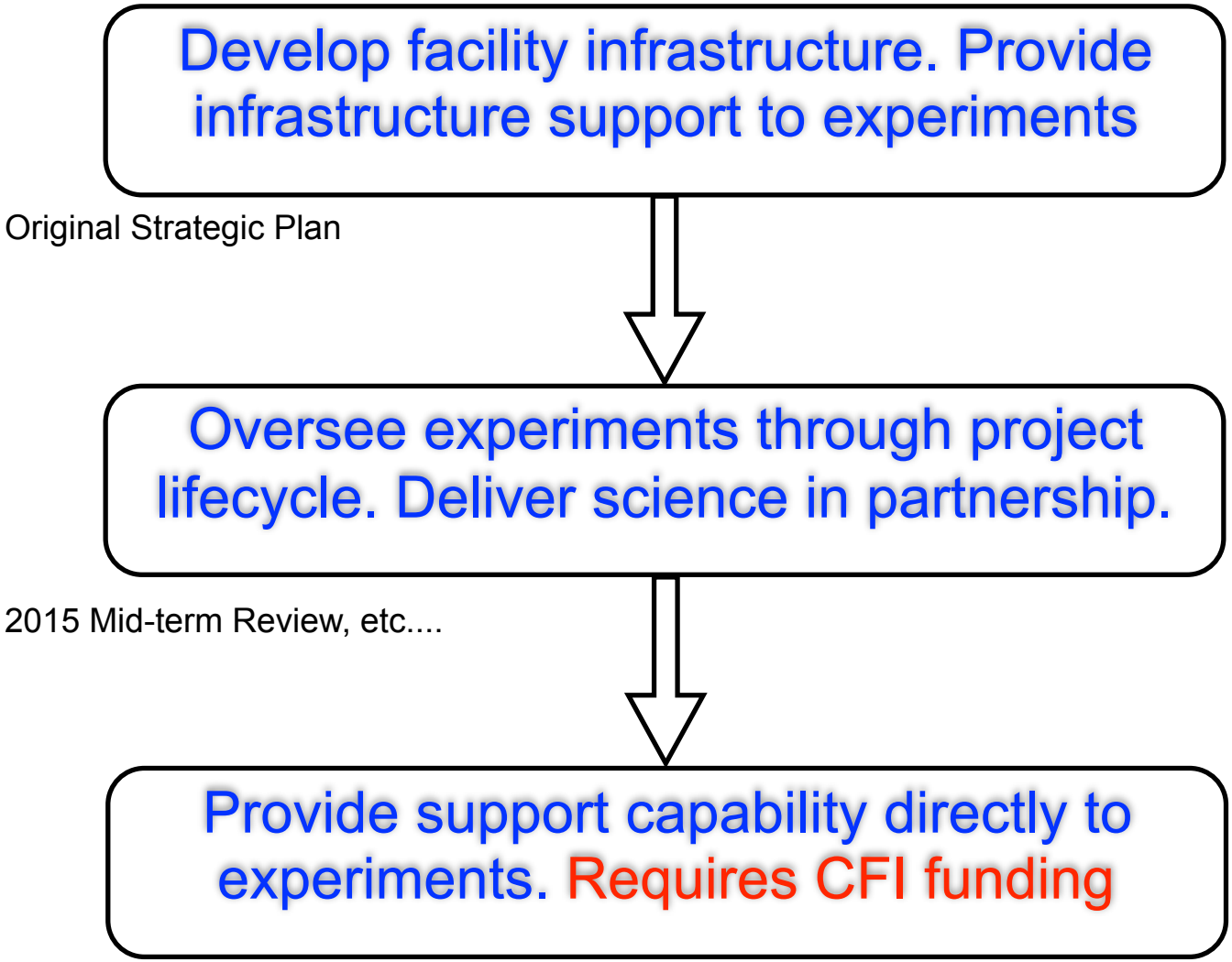
Benefits to Canada

- Scientific and intellectual benefits
  - Development of a world-class science programme
  - Development of international research connections to Canada
    - Fulfilment of the aims of the International Joint Venture Fund
  - Inflow of research staff to Canada (e.g. CERC at Queen's)
  - Reputational enhancement through knowledge mobilisation to international partners
- Economic benefits
  - KPMG economic benefit analysis completed for Provincial funding in 2012, headline figure was 6:1 for Provincial funding in SNO and SNOLAB
    - e.g. equipment and skills procured by international programme in Canada
  - Knowledge transfer currently through home institutes and experiments
    - e.g. DAMIC has two patents in process
  - SNOLAB has connected IP through AAPS (TRIUMF CECR) and is engaging with MITACS through L.U.
  - Direct engagement with mining community on MODCC (and potential connection through genomics)
- Inspirational benefits
  - Strong outreach and media (print, TV, web) programmes (e.g. Hawking, Ellis)
  - Strong professional outreach through CAP, TRISEP, etc. - development of HQP
  - Connections to Science North as our external inspiration partner
  - Multiple awards to SNO researchers (Order of Canada, Vogt medal, ...)

SNOLAB Future Strategy (Director's Cut)

Nigel Smith

Future directions: Mandate evolution



The next five years

- Additional evolution of science programme (with current focus)
- Consolidation of existing threads
- Science and Infrastructure Goals
  - Deliver science from existing programme
  - Develop world-class low background counting facility
- Facility and Management Goals
  - Attainment of ISO9001 and OHSAS18001
  - Completion of deferred facility projects
  - Continued development of robust power distribution
- Community Goals
  - Refinement of plans for Cryopit
  - Greater engagement in development of Canadian community proposals and programme, with Universities and CFREF
  - Develop international engagement (US double beta process, EU DM cryogenic community). Act as broker/interface where possible