



NSAI

Strategy/Business Plan: Monitoring & Updating - The NSAI NML Experience

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6th 2016

Ireland by Numbers

Statistics

Population	4.5m
Language	Irish & English
GDP	€230 Billion
Total area:	70,282 km ²
Currency	Euro (€)
Export Partners	EU (39%) US (21%) UK (18%) Other (22%)
Main Exports	Pharmaceuticals Chemicals Computer Hardware & Software Food & Drink Medical Devices
Largest Industrial Companies	Intel Boston Scientific CRH Google Abbott Medtronic Hewlett Packard Apple Pfizer



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NSAI

Overview

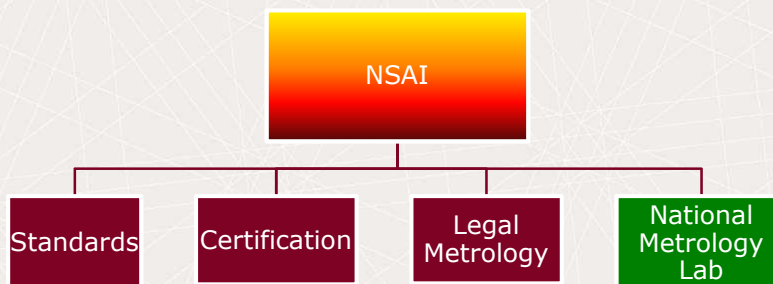
- The National Metrology Laboratory (NML) is a division of the National Standards Authority of Ireland (NSAI).
- NSAI is an Agency of the Department of Jobs, Enterprise & Innovation and is regulated by the Industrial Development Act. Its metrology activities are regulated by the Metrology Act 1996
- NSAI is Ireland's official standards body.
- NSAI is the national certification authority for CE Marking and provides a certification service to enable business demonstrate that Irish goods and services conform to applicable standards.
- NSAI is responsible for scientific, industrial and legal metrology matters in the state.

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NSAI Structure



NSAI Staff Number : approx 140
NML Staff Number : 18 full time (+ 3 researchers)

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Funding



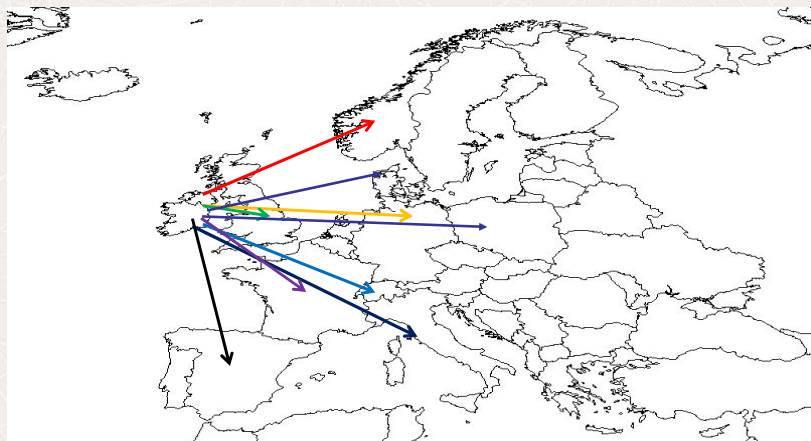
- NSAI Financing
 - Annual Operating Budget € 20m
 - Funded by – Fee Income € 15m
 - Government Grant € 5m (+ €0.5m for equipment)
- NML Financing
 - Annual Operating Budget € 2.2m
 - Funded by – Fee Income € 1m
 - Government Grant € 1.2m

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NML Traceability



NML's Traceability Routes

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Testing & Calibration Labs in Ireland

- 19 Accredited Calibration Labs
- 40+ Non-Accredited Calibration Labs
- 160 Testing Labs
- Many In-Company Calibration Labs



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2016-2020 Strategy Process



2016-2020 Strategy – Work to Date

- Internal – staff Workshops, SMG & Board Workshops
- External Input
 - Information from other European NMI's
 - Industry needs survey
 - General Survey
 - One-to-one interactions key customers
 - Instrument suppliers
 - EMPIR Research Activity – indicator of NMI and industry trends
 - **Horizon 2020 'Grand Challenges'**



2016-2020 Strategy

- History
 - Expansion in 1990s
 - Period of uncertainty pending transfer to NSAI
 - 2010 to present
 - limited development (e.g, acoustics, PTs)
 - Significant staffing reductions (approx. 35% since 2008)
 - Development opportunities have been constrained
 - External environment
 - More private sector operators
 - More high-tech industries
- **2016 Strategy – Critical for future of NSAI Metrology**



Strategy Documentation



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NSAI Strategy 2016-2020

Three main themes

- **Technical Quality Infrastructure** providing a technical quality infrastructure fit to the business and regulatory environment.
- **Business Excellence** responding to the needs of business for relevant product standards and management systems certification
- **Global Business Environment**
 - To leverage the Authority's knowledge and expertise for the benefit of Irish business and national trade infrastructure.

High Level Document – NML Content is really in the Business Plan





Positioning of NSAI Metrology

- Future position of NML
 - Relevance to Industrial Development
 - Re-balance portfolio of activities
 - Resources required to deliver strategy

Succession Planning - Critical

To position NML's staff & science to meet future needs

5 year Timeframe

NSAI

Raising the level

Staff & Expertise

- 2015 – 19 staff
- 2020 – 24 (full time)
(+ 3-4 research students)

Capital Investment

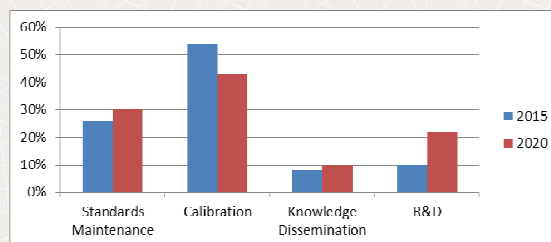
- €1.6m over 5 years

Research & partnerships

- Exposure to research will raise staff level



Re-Balancing of Activities



2020 Strategy –Financing/Resourcing

General Assumptions For Overall Model		2016	2017	2018	2019	2020
Inflation		101.0%	101.0%	101.0%	101.0%	101.0%
Wage inflation		104.0%	104.0%	103.0%	102.0%	102.0%
External Serv Delivery		105.0%	105.0%	103.0%	103.0%	103.0%
Department Head Assumptions						
Volume vs previous year %		100.0%	102.0%	100.0%	102.0%	100.0%
Price vs previous year%		100.0%	100.0%	105.0%	100.0%	100.0%
Additional Travel For Extra Head		-	-	-	-	-
Additional Head Direct	65,000	1.00	1.00	1.00	0.00	0.00
Additional Head Indirect	45,000	0.00	0.00	0.00	0.00	0.00

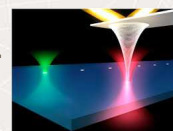
National Metrology	2014 Actuals	BUDGET 2015	2016 Estimation	2017 Estimation	2018 Estimation	2019 Estimation	2020 Estimation
(A) Income	942,564	980,000	980,000	999,600	1,049,580	1,070,572	1,070,572
TOTAL DIRECT COSTS	1,223,769	1,109,702	1,219,445	1,333,955	1,440,330	1,468,635	1,497,072
GROSS MARGIN	(281,205)	(129,702)	(239,445)	(334,355)	(390,750)	(398,063)	(426,501)
TOTAL INDIRECT COSTS	650,593	706,234	719,387	732,923	744,508	754,372	764,387
NET MARGIN	(931,798)	(835,936)	(958,832)	(1,067,278)	(1,135,258)	(1,152,435)	(1,190,888)

	2015	2016	2017	2018	2019	2020
Full-time staff	18	19	20	21	23	24
Researchers	1	2	2	3	4	4
Student Placements (short-term)	2	2	2	2	2	2



Key Objectives

- Improve existing measurement standards and develop primary standards in selected areas (*higher accuracy & breadth of service*)
- Offer high-quality, efficient calibration service through increased automation and service improvement
 - one-stop-shop for customers
 - subcontracting utilisation
- Expand research activity by partnering with European NMI's, industry and 3rd level in metrology-related research
Active participation in EMPIR (primarily CB research.
- Improve methods of knowledge dissemination in the field of metrology (technical guides, webinars, etc)



Business Plan - Elements

- Based on input from Stakeholders & Staff
- Takes account of National & International Trends
- Realistic yet ambitious
- Clear, Concise Objectives
- Targets must be Measureable

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Business Plan - Example

Actions	Deliverable	Tasks	KPI	Timeframe	Resp.	Status
1. Maintain 2 nd level of standards in all areas	14 Measurement standards maintained annually	CMCs maintained & ILC completed	5 ILCs per annum	2016-2018	PH & Tech Managers	
1. Undertake market research & customer analysis to select new areas to be exploited	Market Research & Analysis Report complete. <i>New areas targeted.</i>	Contract market research study & review report	Report produced	2017	PH	
1. Consolidate & improve range & uncertainty in IR thermometry	IR temperature service available over range 0-500C	Equipment procured and characterised	CMCs declared	2018	DMCL	
1. Commence work on Conductivity Standard	Standard established and calibration service offered	Research project commenced & managed. Equipment developed and characterised		2016 2018	OP	
1. Develop project plan for all NML Standards Maintenance work	Project Plan for NML national standards	Complete plan for 14 units	Project plan	2017	PH	
1. Make decision on development of national Time standard	Decision finalised and approved	Assess national need & EU future requirements	Final decision Y/N	2016	DF/ PH	
1. Upgrade NML's control software for national voltage standard	NML Control Software upgraded and operational	Write & test new software	Software operational	2016	OP	

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Operational Plan - Sample

Ref	Objective	Activity	Tasks to be completed / Measure of Performance	Target	Comment
	Solve measurement-related problems for industry through provision of knowledge transfer and consultancy	Deliver suite of PT schemes to calibration labs, authorised verifiers and industry	1. Assist laboratories in maintaining accreditation, achieving accreditation and/or extending their scope. 2. Deliver PT schemes 3. PT service meets requirements of ISO17043	5 labs 10 schemes End 2016	
		Assist industrial companies with measurement-related training and consultancy	- Deliver suite of 16 training courses - delivered to approx. 50 companies - Deliver consultancy assignments	By end 2016 10 assignments delivered	
		Host joint metrology workshop with LMS	Workshop hosted for authorised verifiers	Q2	
		Develop NSAI Metrology Newsletter for electronic distribution	One Metrology eNewsletter developed and distributed	Q2	



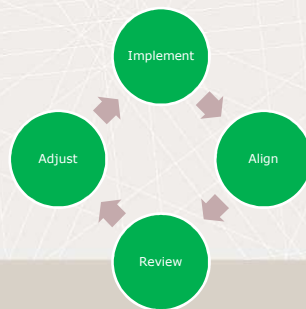
Strategy is not Fixed

- *There are known knowns. These are things we know that we know. There are known unknowns. That is to say, there are things that we know we don't know. But there are also unknown unknowns. There are things we don't know we don't know.* Donald Rumsfeld
- *Examples of 'Surprises!'*
 - Change of Government
 - Brexit
 - Donald Trump!
 - New Industrial demand



Review & Adjust

- Review & adjust Business Plans annually
- Review Strategy after 2-3 years



Monitoring & Reporting

- Business Plans
 - Reviewed Mid-Year
 - Reviewed at end-of-year
 - Reviewed against targets and timeframe
- Operational Plans
 - Key Performance Indicators (KPIs) set
 - Reviewed each Quarter
 - Reported to NSAI Sen Management Group & NSAI Board



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KPI Reporting

	Performance/ Activity Objective	2016 target	Position 30 Jun 2016	Current Status
1	Instrument Calibrations	4300	2160	<div><div></div></div>
2	Research Activities (days)	440	325	<div><div></div></div>
3	Persons Trained	50	42	<div><div></div></div>

	Strategic Measure	2016 target	Position 30 Jun 2016	Current Status
	Training courses delivered	16	8	<div><div></div></div>
	Number of PT's	10	12	<div><div></div></div>
	Certificate turnaround time	< 10 days	9.5	<div><div></div></div>
	Training Course satisfaction (based on attendees feedback sheet)	Score >30	Average 42; No score <40	<div><div></div></div>
	Research papers published	2	1	<div><div></div></div>



Operational Plan – Year-end Reporting

Ref	Objective	Activity	Tasks to be completed / Measure of Performance	Target	Status	Comment
		Establish 'standard' cal system for water calibration	Research work commenced, system established, characterised and ILC complete	Q4	<div><div></div></div>	On-going into 2017
		Set up automated system for 20kg mass standards calibration in NPL's large mass lab (in cooperation with DCL)	System set housed in NPL's Large Mass Lab tested and uncertainty budget completed. To use for 20kg calibrations.	Q3-Q4	<div><div></div></div>	On-going into 2017
		Set up and characterise 'challenge' for specific dimensional calibrations and measurements	System set-up, characterised and operational	Q2	<div><div></div></div>	On-going due to new infrastructure
		Improve efficiency and reduce use of primary pressure standard for hydrostatic pressure calibrations	Set up and characterise digital system for hydrostatic calibration	Q3	<div><div></div></div>	Completed
		Review compliance with CEN ENA	New forecasted & scheduled for 2014 at 10-14 weeks	Q4	<div><div></div></div>	
		Complete pressure CHCs review	Pressure CHCs approved	Q3	<div><div></div></div>	Dependent on completion of peer review
		Complete peer audit	Peer audit successfully completed in Acoustics area	Q3	<div><div></div></div>	Dependent on completion of peer review
			Peer audit successfully completed in Dimensional area	Q4	<div><div></div></div>	
		Maintain QMS certification to ISO9001	ISO9001 surveillance audit completed - maintenance of certification status	Q1	<div><div></div></div>	Subsequent to completion of peer review
		Develop & Submit new CHCs	Humidity & Dewpoint CHCs submitted	Q4	<div><div></div></div>	Subsequent to completion of peer review
			Torque CHCs completed		<div><div></div></div>	
			Force CHCs completed		<div><div></div></div>	



