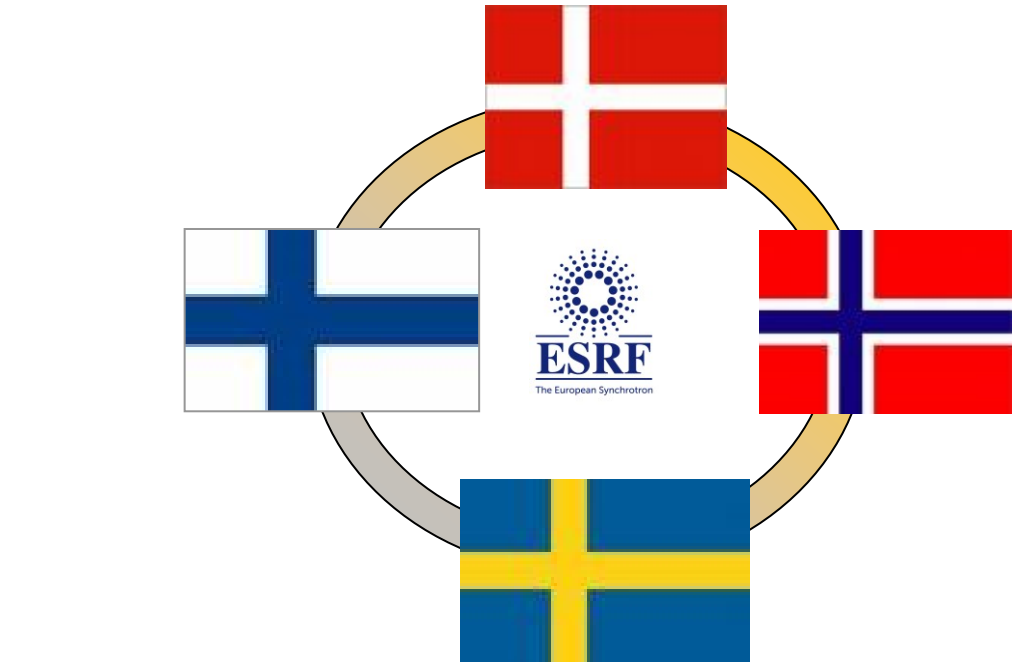
NORDSYNC ANNUAL REPORT 2018



Content

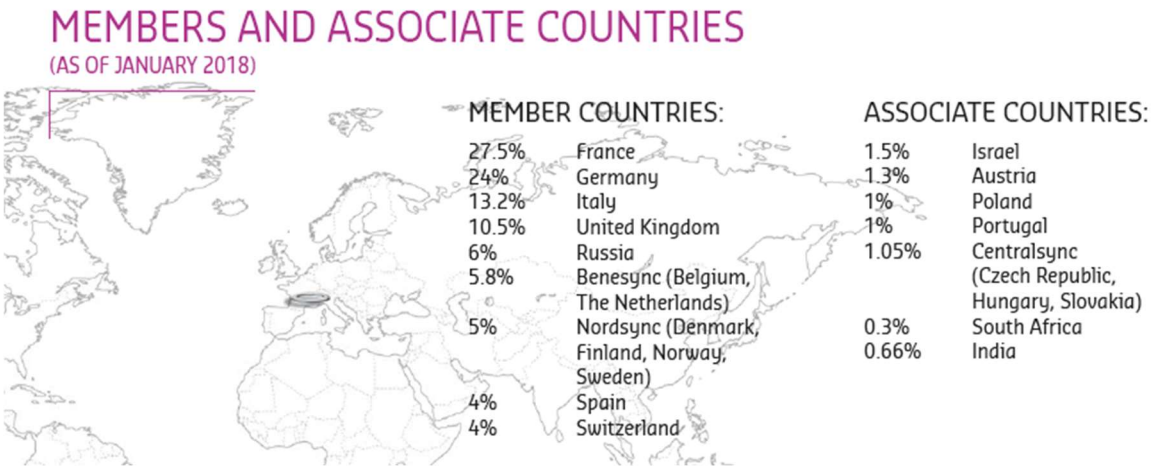
Edited by Victoria Fuglsang-Damgaard (Danish Agency for Science and Higher Education) and Sine Larsen (University of Copenhagen)
Cover: Light installation for the ESRF 30th Anniversary (courtesy ESRF/P, Jayet)

Background

The four Nordic countries Denmark, Finland, Norway and Sweden are members of the ESRF through the consortium Nordsync, as formulated in the revised agreement concerning Nordsync that entered into force as from January 2008. The objective for Nordsync is to coordinate and enhance the use of synchrotron radiation generated by ESRF for scientific and industrial research in the Nordic countries, and to promote purchases to ESRF from Nordic companies.

Since the agreement on ESRF was signed by 12 member states in 1988, the number of countries joining ESRF as member or associate countries have grown continuously. With India as an associate member country in 2017, the ESRF is supported by 22 member countries. The relative contributions from the ESRF member and associated countries are shown in Figure 1.

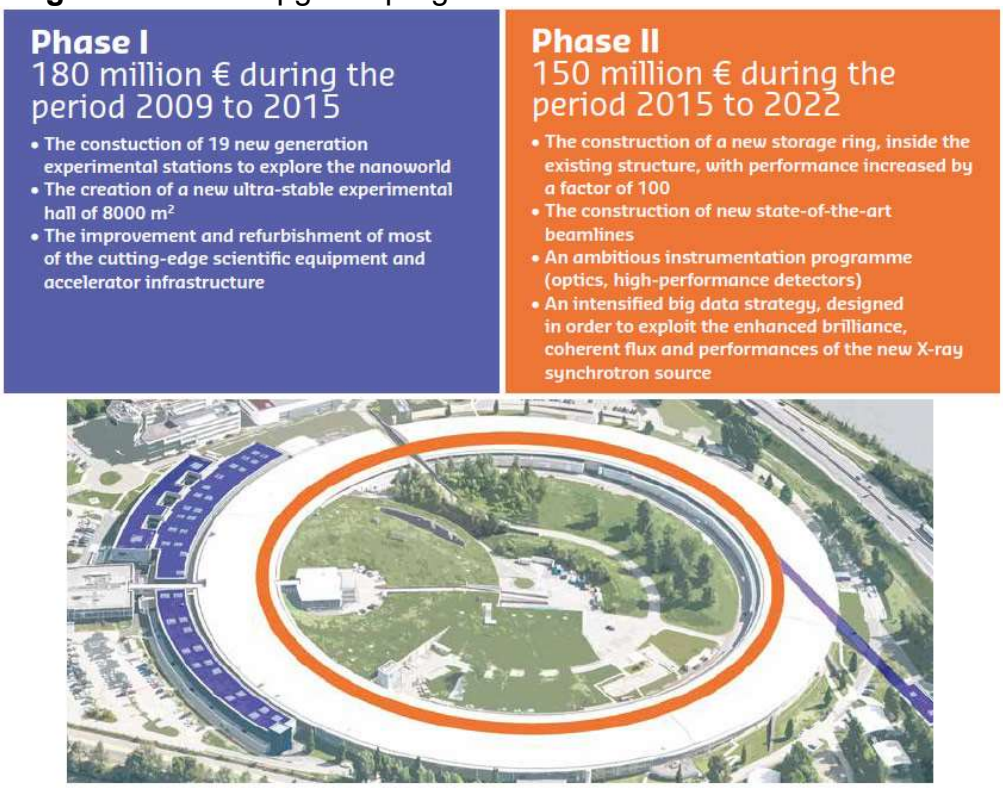
Figure 1. ESRF members and associated countries (as of January 2018).



After 15 years of successful operation, the ESRF in 2009 launched an ambitious Upgrade Programme ESRF UP, which has been on the Roadmap of the European Strategy Forum Research Infrastructures (ESFRI) since its inception. The ESRF UP program has two phases. Phase I, which focused on the beamlines at a budget of 168 MEuro was completed in 2015. Phase II at an estimated cost of 150 M Euro is centered on the enhancement of the ESRF X-ray source, to become EBS (Extremely Brilliant Source).

The Phase II EBS-project was initiated in 2015 and is progressing well according to schedule and budget. The construction of four state of the art beamlines is part of the Phase II upgrade. One of these flagship projects is the CDR3 - *High Throughput large field phase contrast tomography beamline* in which the chair of Danscatt Henning Friis Poulsen, plays an instrumental role. The 20 months necessary shutdown of the ESRF necessary for installation of the new magnetic lattice started December 10, 2018. The first electrons in the new ring are expected early December 2019, commissioning of the new storage ring will begin early 2020 and the user operation is expected to resume with 30 beamlines late 2020.

Figure 2. ESRF Upgrade programme 2009–2022.



New Scientific Opportunities at the ESRF

Structural biology is one of the scientific areas that has been revolutionized by the use of synchrotron radiation. In ESRF's beamline portfolio seven highly productive state of the art beamlines (six crystallography and one small angle scattering) have for years efficiently and successfully served the European structural biology user community. The recent impressive progress in the development of direct electron detectors, electron microscope technology and data processing software which was recognized by the 2017 Nobel prize in chemistry has opened new unique opportunities for the application of cryo-electron microscopy in structural biology.

This materialized rapidly in a desire to use of cryo-EM as a powerful complementary technique to macromolecular crystallography. To meet this demand the ESRF Council in 2015 approved that the structural biology beamlines at ESRF should be complemented by a cryo-EM facility to be operated by a consortium comprised by the other institutes located at the EPN campus and managed like a synchrotron beamline (CM01). A Titan Krios microscope comprises the core of the cryo-EM facility, which has been open to users since late 2017. The cryo-EM facility is described in detail in Kandiah et al (Acta Crystallographica D75 (2019) 528-535.

30 years of the ESRF

The start of the long shut down fell more or less at the same time as the 30 year anniversary for the signature of the intergovernmental convention established the ESRF. In 1988, 12 countries, including the four Nordic Countries joined forces to create

the first third-generation synchrotron light source. In February 1992, the first electrons were stored, and in September 1994, the ESRF user programme started.

The 30th anniversary was celebrated by an event held after the end of the 70th meeting of the ESRF Council on 27 November 2018. The event marked the ESRF's numerous scientific accomplishments and the role that the ESRF has taken in cross-border collaboration in science in Europe and beyond. Representatives from all 22 member countries were present and delivered congratulatory remarks. Two ESRF users Ada Yonath and Sir Venki Ramakrishnan, winners of the Nobel prize for chemistry in 2009, showed in their congratulations their appreciation of ESRF as a unique user facility, and from the political side came congratulatory messages from Carlos Moedas, European Commissioner for Research, Science and Innovation, and Frédérique Vidal, French Minister of Higher Education, Research & Innovation.

Group photo of speakers at the 30th Anniversary of the ESRF

From Nordsync short speeches were given by representatives from each of the four member countries:

- Lars Christensen, Head of Division at the Danish Agency for Science and Higher Education
- Ritva Taurio, Senior Science Adviser at the Academy of Finland
- Helmer Fjellvåg, Professor at the University of Oslo
- Björn Halleröd, Secretary General of the Swedish Council for Research Infrastructures

Lars Christensen, Denmark

Ritva Taurio, Finland

Helmer Fjellvåg, Norway

Björn Halleröd, Sweden

Statutes and transfer of shares

In 2017 Russia acceded as a member of the ESRF. The accession of Russia to the ESRF was initiated in June 2014 at a signing ceremony in Paris, France. However, the formal process with ratification of the Protocol of Accession of Russia to the ESRF Convention was first finalized in November 2017, when the Protocol was confirmed by Italy as the last country. The long process was due to Article 5 of the Protocol of Accession of Russia to the ESRF Convention, which states: *"The present Protocol shall enter into force one month after all the signatory Contracting Parties and the Government of the Russian Federation have informed the Government of the French Republic, as the depositary of the Convention, that they have performed the constitutional procedures required for enactment of the present Protocol".*

From November 2017, Russia became a member of the ESRF and has signed for 6 % of the ESRF Company's shares. The shares were transferred from the following shareholders:

- 1.0% from the Member designated by Germany (DESY)
- 1.5% from the Member designated by Italy (CNR and/or INFN)
- 3.5% from the Member designated by the UK (STFC)

Initiated by the redistribution of shares among the members and Nordsync's overuse of beam time, the Nordsync countries decided to increase their share of the ESRF from 4 % to 5 %. This meant that 1 % of the ESRF Company's shares were formally transferred to the Danish Agency for Science and Higher Education (DAFSHE). DAFSHE is the formal signature for the Nordsync Consortium thus receiving the shares of the ESRF Company. This additional 1 % share was obtained by transfers from the following shareholders:

- 0.5% from the Member designated by Germany (DESY)
- 0.3% from the Member(s) designated by Italy (CNR and/or INFN)
- 0.2% from the Member designated by BeNeSync (BELSPO)

Legal documents

The original text of the Convention was not as such modified following the accession of Russia. However, the ESRF included Russia to the original text, and have prepared an amended text that takes into account both accessions. The legal texts will be the original Convention, the Protocol of Accession of the Netherlands in 1991 and the Protocol of Accession of Russia in 2014 and Statutes of the ESRF Company. The consolidated text of the Convention remains an internal document for ease of reference and use without any legal value.

Construction Cost Reference Value

In 2018 the Construction Cost Reference Value (CCRV) for the ESRF was updated. In the frame of the delivery of the full Upgrade Programme a revision of the CCRV was proposed to the AFC at its meeting in May 2017. Following discussions in AFC, Council and between the Head of Delegations a new revised CCRV was proposed and adopted at the Council Meeting in November 2018.

Council approved the CCRV to be updated from EUR 228,673,500 to EUR 337,596,228. The new CCRV will be applied from 2023 onwards, and will be used for the calculation of the contribution to construction cost:

- By new partners joining after 2022,
- By existing partners increasing their share as of 2023,
- In the frame of the calculation of exceptional contribution due to scientific overuse of the facility after 2022.

The new CCRV will also be used in 2024 when calculating, if applicable, exceptional contributions due to scientific overuse of the ESRF in the period 2021-2023, to be paid in 2025.

Nordsync's financial contribution to ESRF

At its 68th meeting in November 2017, the ESRF Council approved the budget for 2018 of EUR 123,910,000. The Nordsync contribution to the ESRF budget for 2018 amounted to EUR 5,891,450. This contribution consists of three components: i) 5 % Nordsync share of the ESRF budget, including contributions to operation and ESRF-EBS, ii) Nordic overuse of beam time according to ESRF rules for corrective measures.

An overview of Nordsync's contributions to ESRF in the period 2013–2018 is presented in Table 1.

Table 1. Nordsync's contributions to ESRF`s income budget in 2013–2018.

ESRF income budget	2013	2014	2015	2016	2017	2018
Share Members contribution (EUR)*	3,580,569	3,589,870	4,517,250	4,565,600	4,611,250	4,680,450
Exceptional contribution overuse beam time – corrective measure (EUR)*	1,690,616	2,098,347	776,407	1,052,114	1,240,665	1,211,000
Reserve for increase in electricity costs (EUR)*					161,560	
Total contribution Nordsync (EUR)*	5,271,185	5,688,217	5,293,657	5,617,000	5,868,071	5,891,450
Nordsync use beam time (%)	6.37	6.99	6.29	6.01	6.75	6.79
Nordsync ideal share (%)	5.03	5.00	4.81	4.81	4.78	4.75

[1]Source: Calls for contribution 2013–2018

Corrective measures and effect on the distribution of beam time for Nordsync
In order to balance the scientific use of ESRF guidelines are in place to regulate this. Ideally the amount of beamtime allocated for an ESRF member should match the share the member has of the ESRF, in addition each member and associated partner can add 10 % to their ideal share of beam time. The use of beam time exceeding these 10 % is regarded as "overuse" and the member is requested to pay an exceptional contribution.

Beam time is granted through peer review, and though the number of Nordsync proposals submitted roughly corresponds to the 5 % share, the proposals from the

[1] The beam time use is calculated over a three year rolling average.

Nordic user communities are of such an excellent quality that based on the peer review Nordsync user should have more than 6 % of the beam time. As a consequence Nordsync has annually paid exceptional contribution for overuse according to the rules for corrective measures. In 2014 the Nordic use of beam time was "all time high" with a share of 6.99 % reflecting the scientific excellence of Nordic synchrotron user communities, however this success had a price paid by a high exceptional contribution. Since 2015 Nordsync has implemented a new routine, which enables the consortium to control the costs of the exceptional contribution. The implemented routine is as follows: *Allocation of beam time above **6.5 %** (calculated on an average of three years) needs approval from the four Nordsync members*. The scientific consequence of the new routine is that there can be limitations other than those introduced through the peer review process, in the beam time allocated to the Nordic users.

Of the more than 1000 scientists (including PhD students) from the Nordic countries that are engaged in synchrotron radiation based research around 650 performed experiments at ESRF during 2018.

Organisation of Nordsync

Distribution of shares

The distribution of national shares between the four Nordsync countries is adjusted every third year based on their use of beamtime at ESRF. This is measured by the DONE (8 hour) shifts at the ESRF beamlines by the national users, in the preceding three years. This procedure is in accordance with the Nordsync agreement (2008). The annual shares for each country of the DONE shifts for Nordsync are given in Table 2. There will be no beam time at the ESRF available for users in 2019 and most of 2020 due to the installation and commissioning of the new EBS lattice and consequently no overuse of shifts. The calculated distribution of shares for the periods (2014-16) and (2017-19) are presented in Table 3. Appendix 4 gives a more detailed description of the calculation of the national shares

Table 2. Annual distribution of the DONE shifts at ESRF between the Nordsync countries

	Annual percentage of the distribution of shifts				Data mining for distribution of shares (periods)			
Year	**Denmark**	**Finland**	**Norway**	**Sweden**	**2014-2016**	**2017-2019**	**2020-2022**	**2023-2025**
2009	19.8 %	13.2 %	24.1 %	43.0 %	X			
2010	28.5 %	8.2 %	16.3 %	47.0 %	X			
2011	25.7 %	9.7 %	22.7 %	42.0 %	X			
2012	22.8 %	11.6 %	28.9 %	36.7 %		X		
2013	22.3 %	20.0 %	24.0 %	33.7 %		X		
2014	22.6 %	15.6 %	23.9 %	37.9 %		X		
2015	22.2 %	15.8 %	20.8 %	41.3 %			X	
2016	28.3 %	12.9 %	16.4 %	42.4 %			X	
2017	27.8 %	8.5 %	22.0 %	41.6 %			X	
2018	19.59 %	14.55 %	16.17 %	49.70 %				X

Table 3. National shares of the Nordsync membership of ESRF (2014-2016) and (2017-2019)

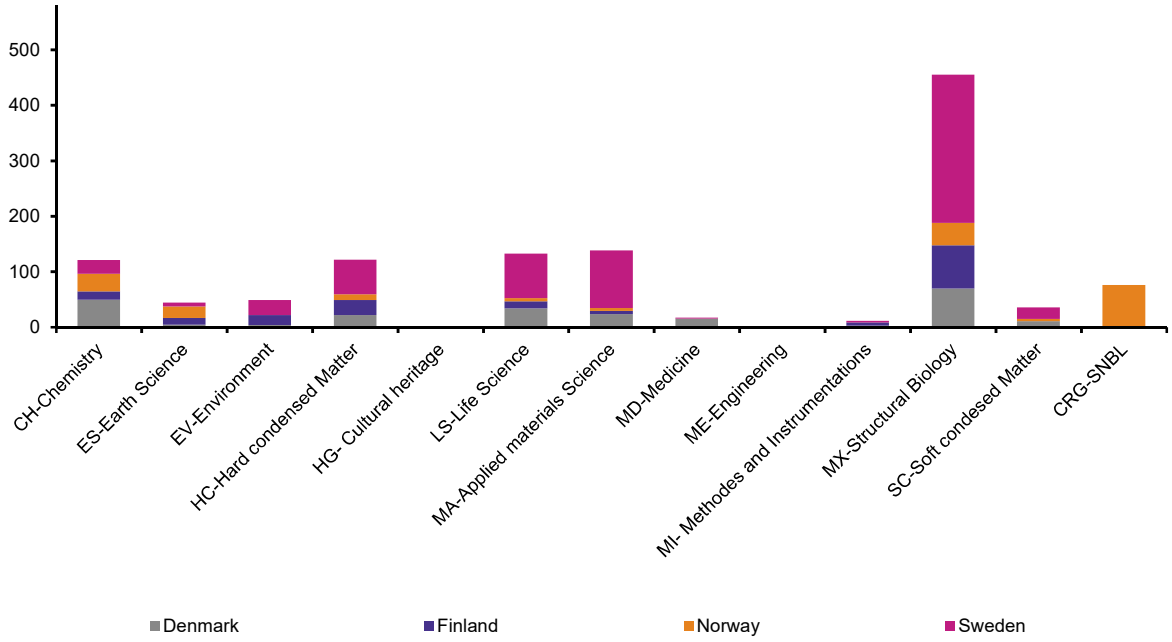
National shares	2014-2016	2017-2019	2020-2022
Denmark	24.66 %	22.57 %	26.10 %
Finland	10.35 %	15.73 %	12.40 %
Norway	21.03 %	25.60 %	19.70 %
Sweden	43.98 %	36.10 %	41.80 %
Subtotal	**100 %**	**100 %**	**100 %**

When ESRF is in normal operation scientists can apply twice a year (March and September) for beam time at all public beamlines and available CRG beamlines at the ESRF by submitting a proposal that describes the expected scientific outcome and the experiment to be performed at ESRF beamline(s). In 2018 twelve proposal review panels reviewed the applications submitted for beam time at a specific group of beamlines, corresponding to different scientific areas.

User operation with beam time at ESRF in 2018 recorded intense activity, as users, proposal review committees and beamline staff etc. maximized the use of the ESRF before the 10 December shutdown for the installation of the new ESRF-EBS lattice. In 2018 the ESRF thus received 2544 proposals of which 924 (36.3 %) were allocated beam time. Requests for beam time, which is scheduled in shifts of eight hours, totalled 34.331 shifts and, of these, 13.117 shifts (38.2%) were allocated. In total 6548 users visited the ESRF in 2018 to take part in 1735 experiments. The average duration of an experimental session in 2018 was eight shifts (just over three shifts for macromolecular crystallography (MX) experiments and just over 12 shifts for non-MX experiments).

The allocated beam time to Nordic users distributed per scientific category is presented in Figure 3. From the figures it is evident that there are significant differences between the four countries in their scientific use of the ESRF. The Swedish structural biology community has exploited the possibility to use the CryoEM “beamline” CM01 extensively, accounting for 6 % of the experiments on CM01 in 2018, while maintaining the position as holding the largest user group in MX-structural biology within Nordsync. The Danish users have used the majority of shifts within materials science. Norway used a significant amount of shifts in chemistry, which is a result of the use at the Swiss – Norwegian beam line (SNBL). Finally, Finland in comparison with the remaining Nordic countries had the largest share of beam time allocated to earth siences, however the majority of Finnish users is within structural biology.

Figure 3. Distribution of beam time statistics at ESRF pr. scientific area for the Nordsync countries in 2018. The calculation is based on DONE shifts e.g. beam time delivered[2].



Nordsync's representation in Council and Administrative and Financial committee (AFC)

The Nordsync delegation is comprised of a representative from each of the four member's countries, which represent Nordsync in the ESRF Council as:

1. Member of Council and Head of Delegation (HoD)
2. Member of Council
3. Member of Council
4. Adviser in the Council and substitute for a member *and Vice Head of Delegation*

According to the decision of the Nordsync Annual Meeting 2013, the council assignments shall rotate every second year among the steering committee members following the order Sweden-Finland-Norway-Denmark, with the Swedish representative acting as Head of Delegation in 2012, Finland in 2013-2014 and so forth.

Head of delegation

- 2012: Sweden
- 2013–2014: Finland
- 2015–2016: Norway
- 2017–2018: Denmark

[2] Pr. country in periods 2017/II and 2018/I.

- 2019–2020: Sweden

and so forth.

According to the decision made in the Nordsync Annual Meeting 2013, the administrative and finance committee (AFC) assignments shall rotate every second year among the steering committee members following the order Sweden-Finland-Norway-Denmark, with the exception during 2014–2017. This is due to Norway acting as the chair of the AFC in 2012–2015.

The (three) two-year rotations of AFC HoD follow:

- 2011–2013: Finland
- 2014–2015: Denmark
- 2016–2017: Norway
- 2018–2019: Sweden

Representation in 2018

The representation of Nordsync in the ESRF Council by the steering committee was in 2018 as follows:

- Head of Delegation Sine Larsen, Denmark (June & November Council)
- Delegate Helmer Fjellvåg, Norway (June & November Council)
- Delegate Ingmar Persson, Sweden (June and November Council)
- Adviser Paula Eerola, Finland (June and November Council)

The representation of Nordsync in the AFC in 2018 was as follows:

- Aase M. Hundere, Norway, adviser (October AFC)
- Victoria Fuglsang-Damgaard, Denmark, delegate (May and October AFC; June and November Council)
- Ritva Taurio, Finland, delegate (May and October AFC; Council November)
- Head of Delegation Hanifeh Khayyeri, Sweden, delegate (October AFC; June Council)

Changes to the delegations in 2018

Keijo Hämäläinen, who had represented Finland in the Nordsync delegation since 2016, decided to step down from this position in Spring 2018, and Paula Eerola was nominated as the new Finnish delegate.

Keijo Hämäläinen has made many valuable contributions to the development of the ESRF in many different positions:

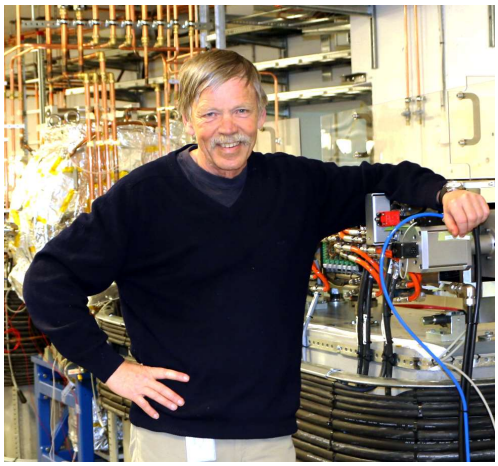
- Chair of the ESRF User organization 2001-2003,
- Member of the ESRF SAC 2006-2008,
- Vicechair of the ESRF SAC 2009-2011
- Chair of the ESRF SAC 2012-2014.

The Nordsync delegation is grateful and expresses its thanks to Keijo Hämäläinen for his great work and for enhancing the visibility of Nordsync at the ESRF.

The visibility of Nordsync at ESRF

Mikael Eriksson, previous machine Director at MAX IV has represented Nordsync in the ESRF Machine Advisory Committee (MAC) 2015-17, and will continue as the representative of Nordsync for the period 2018-2020. The proposition of the ESRF management to have the present machine director at MAX IV Pedro F. Tavares as member of the MAC 2018-2020 was approved by the Council at meeting 27-28 November 2017.

Ragnvald Mathiesen from Norway has been representing Nordsync at the Scientific Advisory Committee (SAC) in the period 2013-2017. His replacement by Per Ahlberg from Uppsala University, Sweden in the renewed SAC for the period 2018-2020 was also approved by the council at the meeting November 2017.



Mikael Eriksson, *previous Machine Director at MAX IV:*
ESRF MAC – 2015-2020

Per Ahlberg, *Uppsala University:*
ESRF SAC – 2018-2020

Pedro F. Tavares, *Machine Director at MAX IV:*
ESRF MAC – 2018-2020

Review committees for beam time allocation

The total number of beam time allocation committees in 2018 was 12. The committees are nominated by the Research Directors at ESRF. All member countries are welcome to suggest candidates for the committees and the Nordsync consortium generally encourages national user communities to take this opportunity. The members from Nordsync countries in the committees are shown in bold.

C01 (Beamlines: ID02, ID03, BM25B, BM32) - Chair: Christopher Lucas**, Oliver Balmes, Sweden)**

This committee deals with surfaces and interface science, including diffraction and spectroscopy.

C02 (Beamlines: ID11, ID15A, ID22, ID31) - Chair: Artem Abakumov, Russia

This committee deals with proposals related to chemistry, atomic structures of material, engineering materials sciences and diffraction.

C03 (Beamlines ID12, ID32) - Chair: Andrea Severing, Germany

This committee deals with spectroscopy, magnetism, chemistry and the electronic structures of materials.

C04 (Beamlines: BM08, BM16, BM20, BM23, BM25A, BM26A, BM30B, BM31) - Chair: Jeroen Van Bokhoven, Switzerland

This committee addresses the electronic and magnetic properties of materials; structural properties aspects are included but only when related directly to magnetic or electronic properties. Techniques/methods include EXAFS, Powder Diffraction, Magnetism.

C05 (Beamlines: ID06-LVP, ID15B, ID27, BM01) - Chair: Philip Salmon, United Kingdom

This committee deals with studies of the structures of ordered systems, studies under extreme conditions, dynamics and spectroscopy.

C06 (Beamlines: ID17, ID19) - Chair: Robert Cernik, United Kingdom.

This committee deals with studies of industrial or engineering relevance, as well as biomedical research involving 2D-3D X-ray imaging. In addition it reviews radiobiology and radiotherapy-related proposals.

C07 (Beamlines: ID16A-NI, ID16B-NA, ID21) - Chair: Francesco Giannici, Italy, **Henrik Birkedal, Denmark.**

This committee reviews proposals involving nanomaterial, environmental science, and spectroscopy.

C08 (Beamlines: ID02, ID13, BM26B) - Chair: Andrei Petukhov, The Netherlands.

This committee reviews proposals on SAXS and soft condensed matter.

C09 (Beamlines: ID09, ID10, BM02, BM28) - Chair: Anders Madsen, Germany, **Adrian Rennie, Sweden**

This committee reviews proposals on spectroscopy and diffraction experiments on soft condensed matter.

C10 (Structural Biology Beamlines and Cryo-EM: ID23-1, ID23-2, ID29, ID30A-1, ID30A-3, ID30B, BM29, BM14U and BM30A) - Chair: Masimo Degano, Italy**, Preben Morth, Denmark, Marjolein Thunnissen, Sweden**

This committee reviews proposals to study the structures of biological macromolecules using X-ray crystallography and Cryoelectron microscopy. Experimental methods include single or multi-wavelength anomalous dispersion (SAD/MAD), molecular replacement using fixed wavelength X-rays, and Laue techniques.

C11 (Beamlines: ID20, ID24, ID26) - Chair: Jérõme Rose, France.

The committee review proposals for a range of X-ray spectroscopic measurements studying electronic and magnetic excitations in matter using resonant and non-resonant inelastic X-ray scattering as well as emission spectroscopy.

C12 (Beamlines: ID18, ID28) - Chair: Valentina Giordano, France.

This committee deals with studies of the structures of ordered systems, studies under extreme conditions, dynamics and spectroscopy.

Staff at ESRF from the Nordic Countries

The representation of the four Nordic countries in the scientific and technical staff of the ESRF corresponds roughly to Nordsync's 5% share. Table 4 lists the names and nationalities of the three scientists and three engineers from the Nordsync countries, who for many years have contributed to the successful development of the ESRF.

In addition, many young scientists from the Nordsync countries are appointed in temporary positions to work at the ESRF. The Nordsync countries are well represented in the post doc staff of the ESRF. More recently also even younger people from the four Nordic countries have used the opportunities offered by the ESRF traineeships. Two trainees took part in the program in 2018 It is worth noting that the four Nordic countries are equally well represented in the post doc and trainee appointments.

Table 4. Staff with Nordic affiliation at the ESRF in 2018.

Scientist			
Name	First name	Nationality	Contract
HONKIMAKI	VEIJO	FINLAND	CDI
WULFF	MICHAEL	DENMARK	CDI
SUURONEN	JUSSI-PETTERI	FINLAND	CCD

Engineers			
Name	First name	Nationality	Contract
SVENSSON	OLOF	SWEDISH	CDI
OHLSSON	STAFFAN	SWEDISH	CDI
OSKARSSON	MARCUS	SWEDISH	CDI

** CDD = temporary contract, CDI = permanent contract*

The Swiss-Norwegian Beamline (SNBL) at BM01 A + B was the oldest and one of the most successful and productive CRG-beamlines at ESRF, and it contributes to the Nordic visibility at ESRF in a positive way. Among its strengths is the possibility to use

many different and combined techniques, considered a great asset of SNBL by its many users.

With the new EBS lattice it will not be possible to have two branches at the bending magnet beamlines, and this will affect and necessitate change of all CRG beamlines at the ESRF. The SNBL was fortunate that the bending magnet beamline BM31 became vacant in 2016, which enabled a move of BM01B to BM31 in May 2016, after it became operational in October 2016, the SNBL user community is now served by two independent BM beamlines. This has increased the flexibility and given new options to employ and develop new techniques keeping SNBL at the forefront of CRG beamlines at ESRF.

During 2018 there has been extensive negotiations between the Swiss and Norwegian shareholders on renewal of the collaboration contract for SNBL.

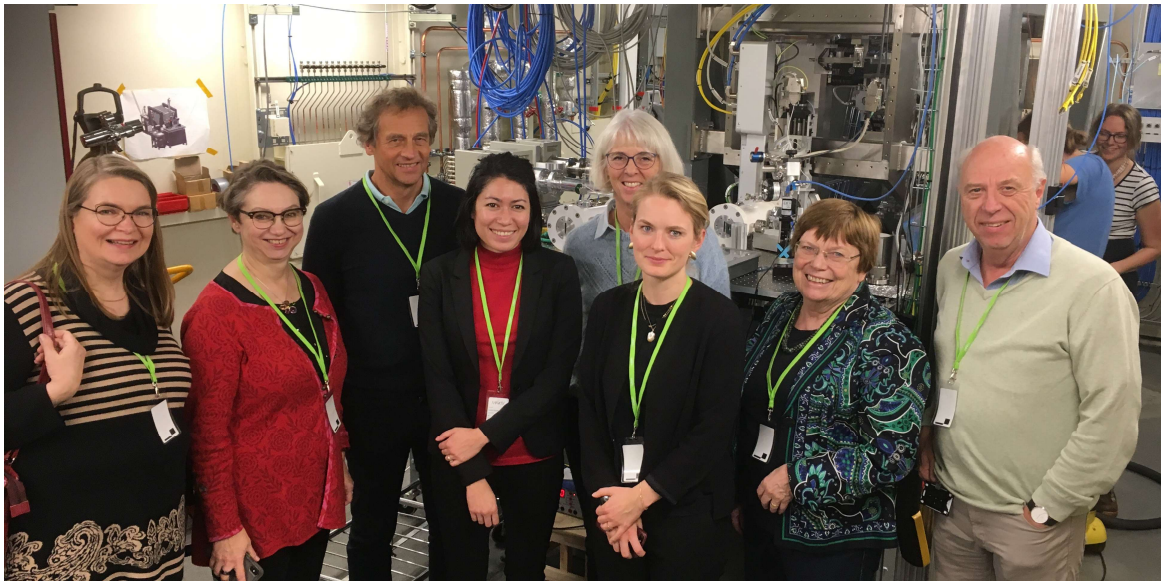
Purchases from the Nordic countries

The return coefficient for purchases from the Nordic countries has always been low. The situation has improved significantly since late 2015 due to the purchase of magnets for EBS from the Danish company Danfysik, however the increase in return coefficient is decreasing as years go on. The return coefficient in for the period of 2016 to 2018 was 0.523. The full statistics is presented in Appendix 2.

Nordsync annual meeting 2018

Nordsync held its annual meeting at the Danish Agency for Science and Higher Education 12th October 2018. The minutes of the meeting are included as Appendix 3.

The annual meeting 2019 will be held in Lund on16th October 2019.



The Nordsync Delegation, Council and AFC-members at the Nordsync Annual Meeting 2019 held at MAX IV Laboratory in Lund: from left to right; Ritva Taurio (FI – AFC), Paula Eerola (FI – Council), Helmer Fjellvåg (NO – Council), Hanifeh Khayyeri (SE – AFC), Aase M. Hundere (NO – AFC), Victoria Fuglsang-Damgaard (DK – AFC), Sine Larsen (DK – Council) and Ingmar Persson (SE – Council)

Appendix 1. Beam time statistics

The following pages display statistics for beam time allocated, scheduled, and number of shifts actually done by the Nordsync countries for the proposal rounds 10/2017 and 4/2018. The code in the first column refers to beam time allocation committee. All proposals containing at least one institution from a Nordsync country are shown, and the breakdown is by country. The same proposal may appear in two different tables if there are applicants from two Nordic countries. The country of the main applicant is also shown: it does not have to be the same as the country listed in the table. The table is without project titles. The list of CRG proposals is not included in these tables.

Denmark

ID	All Req. BL (shifts)	Alloc. BL (shifts)	Done BL (shifts)	Country Code
CH-5352	ID12 (18)			DK
CH-5353	ID12 (18)	ID12 (36)	ID12 (18)	FR
CH-5355	ID12 (15)			DK
CH-5356	ID12 (12)			FR
CH-5357	ID12 (18)	ID12 (18)	ID12 (18)	DK
CH-5378	BM23 (18), BM26A, BM31	BM23 (18)	BM23 (21)	IT
CH-5427	BM01 (12)			DK
CH-5494	ID26 (12), BM23, BM30B			DK
CH-5514	ID15A (9), ID31, ID11	ID15A (9)	ID15A (8)	IT
CH-5518	ID22 (18)			IT
CH-5528	ID12 (18)			DK
CH-5535	ID12 (10)			DK
CH-5561	BM23 (18), BM26A, BM31	BM23 (15)	BM23 (18)	IT
CH-5610	ID19 (3)			NO
CH-5613	ID02 (3), BM26B	ID02 (6)	ID02 (6)	DK
CH-5646	ID26 (12), BM23, BM30B			DK
ES-723	ID15B (9)	ID15B (9)	ID15B (9)	IT
EV-338	BM23 (12), BM30B	BM23 (12)	BM23 (14)	DE
HC-3535	ID22 (9), ID11, ID15A	ID22 (9)	ID22 (9)	DK
HC-3591	ID32 (18)			CH
HC-3631	BM31 (9)			NO
HC-3634	BM01 (12)			DK
HC-3640	ID06-LVP (15)			DK
HC-3642	ID06-LVP (15)			DK
HC-3888	ID32 (18)	ID32 (18)	ID32 (18)	CH
HC-3914	BM23 (15)			IT

HC-3923	BM01 (9)	BM01 (9)	BM01 (9)	DK
HC-3925	BM01 (6), BM31			NO
HC-3928	ID06-LVP (15)			DK
HC-3930	ID06-LVP (15)			DK
HC-4018	ID26 (15)			IT
HG-126	ID19 (12)			DK
HG-127	ID16A-NI (6)			DK
LS-2797	ID13 (9)			DK
LS-2798	ID13 (12)	ID13 (12)	ID13 (12)	DK
LS-2835	ID16A-NI (9)			DK
LS-2840	ID16A-NI (15)	ID16A-NI (15)	ID16A-NI (15)	DK
LS-2842	ID16A-NI (8)			DK
LS-2843	ID16A-NI (8)	ID16A-NI (9)	ID16A-NI (9)	DK
LS-2857	ID16B-NA (12), ID16A-NI	ID16B-NA (12)	ID16B-NA (15)	DE
LS-2863	ID02 (6)	ID02 (6)	ID02 (6)	DK
LS-2874	ID13 (9)			DK
LS-2879	ID13 (12)			DK
LS-2883	ID09 (12)	ID09 (12)	ID09 (12)	SE
MA-3907	BM32 (18)			DK
MA-3920	ID11 (15)	ID11 (15)	ID11 (15)	DK
MA-3922	ID11 (12), ID22	ID22 (12)	ID22 (12)	DK
MA-4193	BM32 (18)			DK
MA-4204	ID11 (6)			DK
MA-4238	ID22 (6)			SE
MA-4251	ID31 (15)	ID31 (15)	ID31 (15)	IL
MD-830 (LT)	ID16A-NI (108)		ID16A-NI (91)	FR
MI-1315	ID01 (9)	ID01 (9)	ID01 (11)	DK
MX-1895 (BAG)	BM29, ID23-2, ID30A-3, ID23-1, ID29, ID30A-1	ID30A-1 (2)	BM29 (9), ID23-1 (3), ID23-2 (6), ID29 (3), ID30A-1 (4.5), ID30A-3 (9)	SE
MX-1999 (BAG)	BM29, ID29, ID23-2, ID30A-3, ID30A-1	BM29 (6), ID23-2 (6), ID29 (3), ID30A-1 (1), ID30A-3 (6)	BM29 (6), ID23-2 (6), ID29 (3), ID30A-3 (6)	SE
MX-2072 (BAG)	BM29, ID30A-1, ID23-1	BM29 (2), ID23-1 (3), ID30A-1 (6)	BM29 (2), ID23-1 (3)	GB
SC-4798	ID09 (15)	ID09 (18)	ID09 (18)	IL
SC-4890	ID13 (9), ID15A (9)	ID13 (9)	ID13 (9)	ESRF

Finland

ID	All Req. BL (shifts)	Alloc. BL (shifts)	Done BL (shifts)	Country Code
CH-5367	BM20 (18)	BM20 (18)	BM20 (18)	FI
CH-5469	ID20 (18)			FI
CH-5470	ID20 (20)	ID20 (18)	ID20 (18)	NL
CH-5488	ID26 (18)			BE
CH-5628	ID20 (18)			FI
CH-5635	ID26 (18)			FI
ES-709	BM30B (18)			FI
ES-711	BM30B (18)			DE
ES-753	ID19 (12)	ID19 (12)	ID19 (12)	FI
ES-794	BM30B (18)			FI
ES-824	ID19 (12)			FI
ES-830	ID19 (12)			DE
ES-855	ID10 (12)			FI
EV-349	ID16A-NI (18)	ID16A-NI (18)	ID16A-NI (18)	FI
HC-3662	ID18 (12)			FI
HC-3765	ID20 (18)	ID20 (18)	ID20 (18)	FI
HC-3779	ID20 (12)			ESRF
HC-3884	ID32 (15)	ID32 (15)	ID32 (15)	FR
HC-3885	ID32 (12)			FR
HC-4001	ID20 (18)			ESRF
HC-4024	ID18 (6)	ID18 (6)	ID18 (6)	FI
HC-4025	ID18 (3)			FI
LS-2749	ID17 (12)			IT
LS-2760	ID19 (5)	ID19 (3)	ID19 (3)	FI
LS-2780	ID16B-NA (6)	ID16B-NA (6)	ID16B-NA (6)	GB
LS-2782	ID21 (12)	ID21 (12)	ID21 (12)	FI
LS-2818	ID17 (12)			IT
MA-3931	ID15A (6), ID19	ID15A (6)	ID15A (6)	FI
MA-4154	ID26 (18)			BE
MA-4362	ID16B-NA (15)			FR
MI-1335	ID20 (18)	ID20 (18)	ID20 (17)	DE
MX-1828 (BAG)	ID30A-1, ID23-1, BM14U, ID30A-3, ID29, BM30A, BM29, ID23-2, ID30B	ID30A-1 (3)	BM14U (3), BM29 (1), BM30A (6), ID23-1 (9), ID30A-1 (12.9), ID30A-3 (9), ID30B (2)	GB

MX-1933 (BAG)	BM29, ID30A-1, ID23-1, ID30B, ID23-2, ID30A-3, ID29	BM29 (3), ID23-1 (3), ID23-2 (3), ID29 (1), ID30A-1 (6), ID30A-3 (3), ID30B (3)	BM29 (9), ID23-1 (6), ID23-2 (6), ID29 (1), ID30A-1 (10.9), ID30A-3 (6), ID30B (6)	FI
MX-1988 (BAG)	ID30A-1, ID23-1, ID23-2, ID29	ID23-1 (3), ID23-2 (6), ID29 (3), ID30A-1 (6)	ID23-2 (3), ID29 (3), ID30A-1 (2.7)	GB
MX-1999 (BAG)	BM29, ID29, ID23-2, ID30A-3, ID30A-1	BM29 (6), ID23-2 (6), ID29 (3), ID30A-1 (1), ID30A-3 (6)	BM29 (6), ID23-2 (6), ID29 (3), ID30A-3 (6)	SE
MX-2084 (BAG)	BM29, ID30A-1, ID23-1, ID30B, ID30A-3	BM29 (3), ID23-1 (3), ID30A-1 (3), ID30A-3 (3), ID30B (3)	BM29 (3), ID23-1 (4), ID30A-1 (7.4), ID30A-3 (3), ID30B (3)	FI
MX-2125	CM01 (9)	CM01 (9)	CM01 (3)	FI
SC-4773	ID13 (3), ID01, ID11			FI
SC-4952	ID20 (18)			FI
SC-4953	ID20 (18)			ESRF

Norway

ID	Submitted for Round	All Req. BL (shifts)	Alloc. BL (shifts)	Done BL (shifts)	Country Code
CH-5332	2017/10	ID15A (18), ID11, ID31			NO
CH-5333	2017/10	ID15A (18), ID19, ID11	ID15A (15)	ID15A (15)	NO
CH-5333	2017/10	ID15A (18), ID19, ID11	ID15A (15)	ID15A (15)	NO
CH-5333	2017/10	ID15A (18), ID19, ID11	ID15A (15)	ID15A (15)	NO
CH-5378	2017/10	BM23 (18), BM26A, BM31	BM23 (18)	BM23 (21)	IT
CH-5402	2017/10	BM26A (18)			IT
CH-5412	2017/10	BM31 (18)			US
CH-5416	2017/10	BM31 (18)			NO
CH-5417	2017/10	BM31 (18)			NO
CH-5418	2017/10	BM31 (18)			NO
CH-5421	2017/10	BM31 (18)			NO
CH-5425	2017/10	BM01 (15)			FR
CH-5515	2018/04	ID15A (18), ID11, ID31			NO
CH-5551	2018/04	BM23 (18), BM31, BM26A			IT
CH-5570	2018/04	BM26A (12)			NO
CH-5577	2018/04	BM31 (12), BM26A, BM23	BM31 (18)	BM31 (18)	NO
CH-5580	2018/04	BM31 (18)			NO
CH-5581	2018/04	BM31 (18)			NO
CH-5584	2018/04	BM31 (15)			NO
CH-5586	2018/04	BM31 (12)	BM31 (15)	BM31 (15)	CH
CH-5587	2018/04	BM31 (15)			CH
CH-5610	2018/04	ID19 (3)			NO
ES-295 (LT)	2015/04	ID19 (63)	ID19 (11)	ID19 (61.5)	FR
ES-827	2018/04	ID19 (6)			FR
ES-828	2018/04	ID19 (6)			NO
ES-831	2018/04	ID19 (6)			NO
ES-839	2018/04	ID19 (6)			US
HC-3542	2017/10	ID31 (12)			NO
HC-3631	2017/10	BM31 (9)			NO
HC-3632	2017/10	BM31 (6)			NO
HC-3736	2017/10	BM02 (18)	BM02 (18)	BM02 (18)	FR
HC-3813	2018/04	ID03 (18)			NO

HC-3835	2018/04	ID22 (9), ID11, BM31			NO
HC-3848	2018/04	ID31 (12)	ID31 (12)	ID31 (12)	NO
HC-3922	2018/04	BM01 (12)			NO
HC-3925	2018/04	BM01 (6), BM31			NO
HG-126	2017/10	ID19 (12)			DK
HG-128	2017/10	ID21 (12)			NO
LS-2810	2018/04	ID15A (9), ID11	ID15A (9)	ID15A (9)	NO
MA-4023	2017/10	BM31 (12)			NO
MA-4031	2017/10	BM01 (12)			NO
MA-4032	2017/10	BM01 (15)			NO
MA-4033	2017/10	BM01 (12)			NO
MA-4034	2017/10	BM01 (12)	BM01 (15)	BM01 (15)	NO
MA-4121	2017/10	BM26B (12)			NO
MA-4139	2017/10	ID10 (9)			NO
MA-4231	2018/04	ID15A (6), ID31			NO
MA-4297	2018/04	BM31 (18)			NO
MA-4301	2018/04	BM01 (15)			NO
MA-4302	2018/04	BM01 (15)			NO
MA-4305	2018/04	BM01 (6)			CH
MA-4413	2018/04	ID10 (15)			FR
ME-1487	2017/10	ID31 (9)			CH
MI-1351	2018/04	ID10 (12)			NO
MX-1933 (BAG)	2017/04	BM29, ID30A-1, ID23-1, ID30B, ID23-2, ID30A-3, ID29	BM29 (3), ID23-1 (3), ID23-2 (3), ID29 (1), ID30A-1 (6), ID30A-3 (3), ID30B (3)	BM29 (9), ID23-1 (6), ID23-2 (6), ID29 (1), ID30A-1 (10.9), ID30A-3 (6), ID30B (6)	FI
MX-1996 (BAG)	2017/10	BM29, ID30A-1, ID23-1, BM30A, ID23-2, ID30A-3, ID29	BM29 (9), BM30A (6), ID23-1 (3), ID23-2 (6), ID29 (3), ID30A-1 (6), ID30A-3 (6)	BM29 (11), BM30A (3), ID23-1 (3), ID23-2 (6), ID29 (3), ID30A-1 (1.3), ID30A-3 (7)	NO
SC-4724	2017/10	ID02 (12)	ID02 (9)	ID02 (8)	NO
SC-4926	2018/04	ID10 (12), ID31			NO

Sweden

ID	All Req. BL (shifts)	Alloc. BL (shifts)	Done BL (shifts)	Country Code
CH-5325	ID15A (15)			DE
CH-5421	BM31 (18)			NO
CH-5430	ID06-LVP (12)			SE
CH-5459	ID09 (21)			DE
CH-5469	ID20 (18)			FI
CH-5474	ID24 (18), ID15A (18)			SE
CH-5480	ID26 (18)			SE
CH-5482	ID26 (18)			SE
CH-5497	ID26 (15), BM31, ID24			SE
CH-5593	ID06-LVP (9)	ID06-LVP (9)	ID06-LVP (9)	DE
CH-5595	ID06-LVP (12)			DE
CH-5628	ID20 (18)			FI
CH-5632	ID24 (18), ID15A (18)	ID15A (16), ID24 (18)	ID15A (14), ID24 (18)	SE
ES-752	ID19 (9)	ID19 (9)	ID19 (14)	FR
ES-759	ID19 (9)			SE
ES-768	ID21 (12)			AU
ES-829	ID19 (3)			GB
ES-847	ID21 (12)			AU
ES-855	ID10 (12)			FI
EV-293	ID03 (18)	ID03 (18)	ID03 (18)	SE
EV-324	ID21 (6)	ID21 (9)	ID21 (9)	SE
HC-3502	ID01 (18)	ID01 (18)	ID01 (18)	SE
HC-3508	ID03 (15), BM02			RU
HC-3515	BM25B (16)	BM25B (18)	BM25B (18)	SE
HC-3567	ID12 (15)	ID12 (15)	ID12 (15)	FR
HC-3583	ID32 (18)			SE
HC-3607	ID32 (18)			GB
HC-3621	BM23 (3)			SE
HC-3645	ID15B (6), ID27			SE
HC-3724	ID16B-NA (6), ID16A-NI			SE
HC-3772	ID20 (18)	ID20 (18)	ID20 (18)	SE
HC-3789	ID26 (12)			SE
HC-3805	ID01 (12)			DE
HC-3807	ID01 (18), ID13	ID13 (9)	ID13 (9)	SE
HC-3881	ID32 (18)	ID32 (18)	ID32 (18)	SE

HC-3910	BM23 (9)			SE
HC-3926	BM01 (6), ID27, ID15B			SE
HC-3985	ID20 (15)			SE
HC-4000	ID20 (12), ID32 (12)	ID32 (12)	ID32 (12)	IT
HC-4015	ID26 (15)			SE
HC-4032	ID18 (18)	ID18 (18)	ID18 (18)	IT
HG-126	ID19 (12)			DK
LS-2736	ID09 (15)	ID09 (18)	ID09 (18)	SE
LS-2758	ID19 (12)	ID19 (12)	ID19 (12)	GB
LS-2761	ID19 (6)	ID19 (6)	ID19 (6)	CN
LS-2768	ID16A-NI (18)	ID16A-NI (18)	ID16A-NI (18)	BE
LS-2780	ID16B-NA (6)	ID16B-NA (6)	ID16B-NA (6)	GB
LS-2802	ID13 (9)			SE
LS-2821	ID19 (9)	ID19 (6)	ID19 (6)	SE
LS-2832	ID19 (12)	ID19 (9)	ID19 (9)	SE
LS-2840	ID16A-NI (15)	ID16A-NI (15)	ID16A-NI (15)	DK
LS-2849	ID16A-NI (6)			SE
LS-2861	ID21 (6), ID16B-NA			SE
LS-2878	ID13 (12), ID03			SE
LS-2883	ID09 (12)	ID09 (12)	ID09 (12)	SE
LS-2885	ID09 (15)	ID09 (15)	ID09 (15)	SE
MA-2239 (LT)	ID03 (72)		ID03 (66)	SE
MA-3858	ID01 (12)	ID01 (12)	ID01 (12)	SE
MA-3879	ID03 (9)			SE
MA-3885	ID03 (12)			SE
MA-3896	BM32 (18)			SE
MA-3918	ID11 (13)	ID11 (15)	ID11 (15)	SE
MA-3943	ID15A (6)			SE
MA-3944	ID15A (21), ID31, BM26B			BR
MA-3969	ID31 (12)			SE
MA-4088	ID16A-NI (12)			SE
MA-4109	ID13 (18), ID01			SE
MA-4112	ID13 (12), BM26B			SE
MA-4117	BM26B (12), ID10			SE
MA-4123	BM26B (21), ID15A, ID31			BR
MA-4200	ID11 (12)	ID11 (12)	ID11 (12)	SE
MA-4238	ID22 (6)			SE
MA-4339	ID19 (6)			FR

MA-4366	ID16B-NA (6), ID16A-NI			SE
MA-4371	ID02 (7), BM26B			AU
MA-4394	BM26B (6)	BM26B (6)	BM26B (6)	FR
MA-4422	ID26 (18), ID20 (18)	ID20 (18), ID26 (18)	ID20 (18), ID26 (18)	SE
MA-4427	ID26 (18), BM23 (9), BM25A, BM30B			ESRF
MD-1129	ID17 (9)			ESRF
MD-1150	ID19 (3)			SE
MD-1157	ID16A-NI (15)			SE
MD-1162	ID21 (12)			SE
MD-1164	ID02 (9)			SE
MD-1169	BM23 (12)			SE
MD-1176	ID17 (15)	ID17 (9)	ID17 (9)	FR
MI-1315	ID01 (9)	ID01 (9)	ID01 (11)	DK
MX-1891 (BAG)	BM29, ID30A-1, ID23-1, ID29, BM30A, ID23-2, ID30A-3, ID30B	BM29 (3), ID30B (6)	ID23-1 (6), ID23-2 (3), ID29 (21), ID30A-1 (3.8), ID30A-3 (11.5), ID30B (6)	SE
MX-1895 (BAG)	BM29, ID23-2, ID30A-3, ID23-1, ID29, ID30A-1	ID30A-1 (2)	BM29 (9), ID23-1 (3), ID23-2 (6), ID29 (3), ID30A-1 (4.5), ID30A-3 (9)	SE
MX-1948 (BAG)	BM29, ID30A-1, ID23-1, ID29, ID30B, ID23-2, ID30A-3	BM29 (2), ID23-1 (6), ID23-2 (4), ID29 (3), ID30A-1 (1), ID30A-3 (3), ID30B (3)	BM29 (2), ID23-1 (6), ID23-2 (12), ID29 (10), ID30A-1 (6.3), ID30A-3 (6), ID30B (3)	SE
MX-1964	ID23-1 (9), ID29	ID29 (3)	ID29 (3)	SE
MX-1964	ID23-1 (9), ID29	ID29 (3)	ID29 (3)	SE
MX-1964	ID23-1 (9), ID29	ID29 (3)	ID29 (3)	SE
MX-1983 (BAG)	BM29, ID30A-1, ID29, ID30B, ID23-2, ID23-1, ID30A-3	BM29 (2), ID23-1 (3), ID23-2 (6), ID29 (3), ID30A-1 (4), ID30A-3 (2), ID30B (3)	BM29 (1), ID23-1 (3), ID23-2 (2), ID29 (3), ID30A-1 (3), ID30A-3 (2), ID30B (3)	GB
MX-1989 (BAG)	ID23-1, ID29, ID23-2	ID23-1 (6), ID23-2 (12), ID29 (6)	ID23-1 (6), ID23-2 (12), ID29 (7)	SE
MX-1995 (BAG)	BM29, ID30A-1, ID23-1, ID29, ID30B, ID23-2, ID30A-3	BM29 (4), ID23-1 (6), ID23-2 (6), ID29 (9), ID30A-1 (2), ID30A-3 (6), ID30B (9)	BM29 (2), ID23-1 (6), ID23-2 (3), ID29 (6), ID30A-1 (4.3), ID30A-3 (1.5), ID30B (3)	SE
MX-1999 (BAG)	BM29, ID29, ID23-2, ID30A-3, ID30A-1	BM29 (6), ID23-2 (6), ID29 (3), ID30A-1 (1), ID30A-3 (6)	BM29 (6), ID23-2 (6), ID29 (3), ID30A-3 (6)	SE
MX-2014	CM01 (9)	CM01 (9)	CM01 (11)	SE
MX-2015	CM01 (12)	CM01 (9)	CM01 (9)	SE
MX-2016	CM01 (12)	CM01 (9)	CM01 (9)	SE

MX-2017	CM01 (9)			SE
MX-2021	CM01 (9)			SE
MX-2027	BM29 (6)	BM29 (6)	BM29 (6)	SE
MX-2030	CM01 (9)			SE
MX-2035	BM29 (3)	BM29 (3)	BM29 (3)	SE
MX-2036	CM01 (12)			SE
MX-2037	CM01 (12)			SE
MX-2046	CM01 (9)			SE
MX-2047	BM29 (3)	BM29 (3)		SE
MX-2063	CM01 (9)	CM01 (9)	CM01 (9)	SE
MX-2074 (BAG)	ID30A-1, ID23-1, ID23-2, ID30A-3	ID23-1 (3), ID23-2 (3), ID30A-1 (3), ID30A-3 (3)	ID23-2 (3), ID30A-1 (1.3), ID30A-3 (3)	SE
MX-2124	BM29 (24)	BM29 (3)	BM29 (3)	SE
MX-2128	BM29 (3)	BM29 (3)	BM29 (3)	SE
MX-2134	CM01 (9)	CM01 (9)	CM01 (9)	SE
MX-2141	BM29 (3)	BM29 (3)	BM29 (3)	SE
MX-2145	ID30A-1 (1), ID30A-3	ID30A-1 (1)	ID30A-1 (1)	SE
SC-4702	ID31 (12), ID15A	ID31 (12)	ID31 (12)	SE
SC-4706	BM20 (15)			SE
SC-4717	ID19 (9), ID17			GB
SC-4727	ID02 (9)			SE
SC-4748	ID02 (6), BM26B			SE
SC-4759	ID02 (6)			SE
SC-4768	ID13 (15)			ESRF
SC-4821	ID10 (12), ID02	ID02 (9)	ID02 (9)	SE
SC-4835	ID01 (12)			SE
SC-4871	ID02 (6)			SE
SC-4889	ID13 (15)			ESRF
SC-4895	ID13 (6)			FR

Appendix 2. Purchase return coefficients for Nordsync

Evolution of “purchase return coefficients” from January 1996 to December 2018

Period	Return coefficient
1/96–12/98	0.26
1/97–12/99	0.17
1/98–12/00	0.25
1/99–12/01	0.28
1/00–12/02	0.33
1/01–12/03	0.31
1/02–12/04	0.34
1/03–12/05	0.54
1/04–12/06	0.50
1/05–12/07	0.63
1/06–12/08	0.58
1/07–12/09	0.57
1/08–12/10	0.50
1/09–12/11	0.41
1/10–12/12	0.37
1/11–12/13	0.31
1/12–12/14	0.30
01/13–12/15	1.21
01/14-12/16	0.95
01/14-12/17	0.93
01/16-12/18	0.52
Historical average	0.41

Appendix 3. Minutes of the annual Nordsync meeting 2018

Nordsync Delegation Participants:

Denmark: Sine Larsen (SL) and Victoria Fuglsang-Damgaard (VF)

Finland: Paula Eerola (PE) and Ritva Taurio (RT)

Norway: Aase Marie Hundere (AMH) and Helmer Fjellvåg (HF)

Sweden: Hanifeh Khayyeri (HK) and Ingmar Persson (IP)

Location: Danish Agency for Science and Higher Education, Bredgade 43, Copenhagen

Date: October 12th 2018

Time: 10:30-16:00 hrs (finished 15:45 due to travel schedules)

Item 1 Adoption of the agenda

Agenda for this meeting was adopted.

Item 2 Approval of minutes from the 2017 Nordsync annual meeting in Copenhagen

The minutes from the Nordsync Annual Meeting in Copenhagen held on October 9th 2017 were approved.

Item 3 Nordsync Annual Report 2017

A first draft version of the Annual Report 2017 had been sent to Nordsync delegates ahead of the meeting. The minor adjustments compared to the previous reports were commented by SL and VF. The delegates gave oral feedback and comments to the draft Annual Report. An updated version based on this input will be sent out for additional comments and final approval by email.

Item 4 Beamtime use of ESRF within Nordsync in 2017

The delegates went through the documentation for the beam time allocated to the four member countries, and noted some relative changes compared to previous years, e.g. a small decrease in the Finnish, and a small increase in the Danish use. The use of other synchrotrons than ESRF by the community in each of the four Nordic countries was also part of the discussion at this point of the agenda.

HF informed that an application to The Research Council of Norway for funding 2021-2025 for the SNBL beamline was sent earlier this year.

HK informed Sweden wishes to keep the ideal share to 5% to try to cap the Swedish use to approximately 2% of the total Nordsync beam time when ESRF is fully operational after the long-shut down. But Sweden has no intention to cap the other countries' use of beam time if they want to pay for over-use (more than total 5% of Nordsyncs), and is willing to discuss with the ESRF administration on how to approach this if needed.

A discussion took place on how to calculate the beam time percentage for each country for the coming years during the long-shut down (2019-2020), as this will have an effect onwards. There was consensus to the suggestion that a 10 years average (2008-2018) could be used for the next two years. In 2021, the beam time statistics for the period of 2015-2017 should be used. From 2022-2024 the calculation will resume normal procedure. However the AFC-delegates would need to obtain a formal mandate for this before a final decision can be made on a temporary revised method for the calculation of beam time.

IP raised the question on, how to minimize the time delay in the calculation of the distribution of shares. This should be discussed and potentially adjusted in the next revised agreement for Nordsync. Besides a new agreement on calculations of shares, a revised agreement should include the change of the shares among the countries after the Russian accession to the ESRF.

HK, VH, RT and AMH are going to return with a final confirmation on how to do the calculation for the coming years. The development of how to calculate the shares during the long-shut down and a potential new model for calculation of shares should be presented at the 2019 Nordsync Annual Meeting.

Item 5 Report from the HoD meeting, 21 September 2018

This agenda item was covered as agenda item 3 at the meeting.

SL reported from the recent Head of Delegation meeting held in Lyon.

There is progress in the Security Plans for the EPN site, which should return to the 2011 state.

The shut-down of the facility will begin December 10, 2018.

Construction of EBS is on track, 96 out of the 129 modules have been finished, the workplan is in place for the installation, and work contracts have been amended for shift work.

The EBS budget approved by the Council is 150M Euro - 130M Euro had been financed, 3M Euro missing funds are foreseen in 2022. There will be a call for an extension of the EIB loan.

The budget for 2019 was presented with two options 1% and 2%.

A small working group comprised of members of the HoD, which includes SL had looked at the procedures for extension and appointment of ESRF Directors. The working group had reached an agreement on the guidelines to be used for the extension of Directors, and on the procedures for advertising and appointment in Directors positions. The Directors should not be extended after eight years appointment, and the position should be openly advertised. These guidelines are important as the contracts of the present Directors will end in the near future: Francesco Sette – 31/12 2020; Pantaleo Raymondi – 15/1 2021; Jean Susini – 31/12 2021; Harald Reichert 31/12 2021; Luis Ortiz - 31/8 2022.

Agenda item 6 Discussion of the items on the agenda of the upcoming ESRF AFC, 18.-19. October

HK will not participate in the AFC-meeting on October 18-19 due to other work commitments. HK will forward the Swedish position, if relevant to the Nordsync-delegation prior to the meeting.

The predicted evolution of the staffing complement from 2020 onwards was discussed. At the AFC meeting the Nordsync delegates will ask for more information, and suggest that the depiction of the evolution of the staff complement also should include the years of Phase I of the Upgrade program. It would also be valuable to see the evolution in full historical perspective.

Budget for 2019: Norway, Finland and Denmark can agree on the 2 % option. There was a discussion on indexation of the budget, and the division on the different budget posts. Sweden will have decided on its position ahead of the AFC-meeting.

Item 7 Discussion of the upcoming Council meeting and 30 years anniversary of the ESRF, 26.-27. November

Sweden will be presented by Björn Halleröd

Denmark will be presented by Lars Christensen

Norway will be presented by Helmer Fjellvåg

Finland will be presented by Ritva Taurio

SL will send an enquiry to ESRF about a potential tour of the facility for Björn Halleröd and Lars Christensen.

Item 8 – Nordsync representation in SAC, MAC and proposal review panels

SAC and MAC covered in agenda item 3.

Proposal review panels: No comments.

Item 9 – Information on national status regarding the projects MAX IV, ESS and EU-XFEL

IP provided a status on the developments in Sweden (forwarded after the Annual Meeting): The construction of buildings, linear accelerator and storage rings at MAX IV were on time and budget. However, beam-line program has seen delays of 1-2 years. To clarify the background to these delays the Swedish Research Council (VR) initiated a review of the project management of the beam-line program at MAX IV. The report from the expert group, released in August 2018, was critical to the lack of appropriate resource-loaded scheduling for the beam-line program. The director of MAX IV has felt limited support from Lund University leadership and VR, due to the report, and decided on September 3, 2018 to leave his position. At the MAX IV board meeting September 4, the present physical science director Ian McNulty was appointed as interim director of MAX IV until a permanent director has been selected.

The MAX IV user meeting took place September 24-26, 2018 in Lund. The present situation and priorities at MAX IV were presented. These include an increased focus on starting up beam-lines for commissioning, commissioning experiments with friendly users and later on open calls. This may result in that only a limited of the options the beam-lines can offer will be available in the first calls, and if a beam-line has two branches only one will be available at the opening of the beam-lines.

A new board of the user organization FASM was elected with Prof. Jonas Weissenrieder, KTH, Stockholm, as chairman, and six members (three men and three women), including one representative from Denmark and Finland, representing users of all scientific areas the beam-lines at MAX IV offer.

The ESS facility has been delayed due to new requirements. A number of buildings had to be reinforced to withstand earthquakes of magnitude 7. This has increased the cost for the construction of ESS, but how this shall be covered has not been decided yet. This will result in a smaller number of beam-lines available at start. In regards to the Nordic research communities a worry about the access to beam time at ESS was expressed. A forum for a discussion on this topic could be NOS-RI or Nordforsk Research Infrastructure Group.

The Swedish Materials Science beamline at PETRA III, P21.2 for diffraction and imaging had its first beam September 2018, and will open for users in late 2018.

HK reports on EU-XFEL. Things are going well, and three new beam lines will come online soon.

Item 10 Information on relevant national activities in relation to user communities

FI: The new Roadmap 2019-2020 for Finnish Research Infrastructures has been published. MAX IV and ESRF is included in the Roadmap. However, MAX IV was placed under critical/under observation, which means that it must be considered if the facility should remain on the Roadmap after 2020. XFEL was evaluated, and removed due to a lack of user community.

NO: HF provided information on the NORSCATT, which has been established as a user organization. The aim of the user organization is to provide information and facilitate meetings. They do however not cover travel reimbursements. Currently there has not been allocated separate funding for the organization, however there are possibilities to apply. Meetings will be supported by the Norwegian Research Council. First meeting was held May 2018.

SE: Swedish Research Council's Guide to Research Infrastructures will be published soon.

DK: The Ministry, e.g. the Danish Agency for Science and Higher Education (DAFSHE), conducted in Spring 2018 a survey/evaluation of the Danish memberships of large international Research Infrastructures (CERN, ESO, ESRF, ILL, XFEL, EMBL and ITER), subsequently leading to an Action Plan for the Danish Memberships of International Research Facilities (October 2018). The Danish membership of ESRF was evaluated positively. Danscatt is the umbrella organization for Danish neutron and synchrotron users, the grant from DASHE finances travel expenses associated with experiments and very importantly the annual Danscatt meeting.

Item 11 AOB

Approval of extension of contract for restaurant – approved unanimously.

The date for the 2018 Annual Meeting will be decided via mail correspondence. VF will circulate a doodle with the aim of finding the date.

Appendix 4. Calculation of the national shares

Calculations of the national shares

1. The calculations are based on data delivered by the ESRF containing information for each proposal on the number of DONE shifts, participating institutions, their nationality, and whether the proposal is a CRG proposal, normal proposal, or industrial proposal.
2. The National Fraction for each proposal is calculated as the number of participating institutions from the particular country divided by the total number of participating institutions. “Institutions” are considered as identical if they have the same postal address unless they belong to different research institutions or organisations. Only institutions from ESRF members or ESRF associates are considered. The ESRF itself is considered as a member institution.
3. A weight of 0.25 is assigned to the CRG proposals and a weight of 1.0 to the normal proposals. Industrial proposals are assigned a weight of 0.0.
4. For each proposal the weighted number of shifts is calculated as (Number of DONE shifts) × (National fraction) × (Weight)
5. The national share is calculated as (sum of weighted number of shifts for each country)/(sum of all weighted number of shifts for all Nordsync countries).

Payment for overuse at the ESRF

In case of a request from the ESRF for an additional contribution due to overuse in the preceding three years, the contribution from each Nordsync country shall be calculated using the national share valid for the year where the additional contribution is to be confirmed at the ESRF council.

‡ According to the ANNEX 1 to document on Scientific juste retour, “Guidelines for a Re-adjustment of Contribution Rates”, ESRF 10 June 1998.

Appendix 5 Nordsync delegation 2018

Council delegates

Finland: Paula Eerola, paula.eerola@helsinki.fi
Sweden: Ingmar Persson, ingmar.persson@slu.se
Norway: Helmer Fjellvåg, helmer.fjellvag@kjemi.uio.no
Denmark: Sine Larsen, sine@chem.ku.dk (head of delegation in 2017-2018)

AFC delegates

Finland: Ritva Taurio, ritva.taurio@aka.fi
Sweden: Hanifeh Khayyeri, Hanifeh.Khayyeri@vr.se (head of delegation in 2018)
Norway: Aase Marie Hundere amh@forskningsradet.no
Denmark: Victoria Fuglsang-Damgaard, vfu@ufm.dk

Purchasing advisors

Sweden: Johan Holmberg, johan.holmberg@vr.se
Norway: Ole Petter Nordahl, Ole.Petter.Nordahl@cern.ch
Denmark: Nikolaj Zangenberg, nzg@teknologisk.dk