EISCAT Scientific Association
Registered as a Swedish non-profit organisation
Organisation number: 897300-2549

Annual report for the financial year 2016-01-01 – 2016-12-31

The EISCAT Council and the Director for the Association submits herewith the annual report for 2016.

ADMINISTRATION REPORT

Ownership, organisation and objective

The EISCAT Scientific Association was established in 1975 through an agreement between six European organisations. Japan joined in 1996 and the Peoples Republic of China in 2007.

The EISCAT Associates at 2016-12-31 are: China Research Institute of Radiowave Propagation (Peoples Republic of China), National Institute of Polar Research (Japan), Natural Environment Research Council (United Kingdom of Great Britain and Northern Ireland), Norges forskningsråd (Norway), Institute for Space-Earth Environmental Research, Nagoya University (Japan), Suomen Akatemia (Finland), and Vetenskapsrådet (Sweden).

The now running EISCAT Agreement came into force 2007-01-01, with all Associates making long term funding commitments to the Association. The Association has its formal seat in Kiruna, Sweden, and is registered as a non-profit organisation.

The aim of the Association is to make significant progress in the understanding of physical processes in the high latitude atmosphere by means of experimental programmes generally conducted using the incoherent scatter radar technique, which may be carried out as part of wider international projects. For this purpose, the Association has developed, constructed, and now operates, a number of radar facilities at high latitudes. At present, these comprise a system of stations at Tromsö (Norway), Kiruna (Sweden), Sodankylä (Finland), and Longyearbyen (Svalbard).

The Association is fully funded by the Associates but additional operations may also be funded by short term additional contributions from both Associate and non-Associate bodies. Depending on the available funding, scientific priorities and operational targets are adjusted on an annual basis.

The EISCAT Council is charged with the overall administration and supervision of the Association's activities. The Council appoints a Director, who is responsible for the daily management and operation of the facilities of the Association.

Operation and scientific development

The EISCAT Radars delivered a full programme of operations for the user community and operated reliably throughout the year.

The various EISCAT radars operated for a total of 2 726 accounted hours (2 674 hours in 2015).

Common Programmes amounted to 53% (36%) of the operations. Special Programmes amounted to 39% (55%) and other operations amounted to 8% (9%) of the total hours.

France, Russia, South Korea and Ukraine have affiliate agreements and totally 90 hours (76 hours) were affiliates accounted. The Peer-Review Programme made it possible for users from Japan, Germany, Norway, UK and USA to run experiments, at no cost, on the systems. Peer-Review time amounted to 85 accounted hours (176 hours).

Future operation and scientific development
All systems are ready for users. These comprise now of the EISCAT Svalbard Radar, Heating and the UHF and VHF radars with the possibility to run the VHF in tristatic mode by using the antennas in Kiruna and Sodankylä for reception.

Project activities
The final EU Framework Programme 7 funded project ended in autumn: MISW "Mitigation of space weather threats to GNSS services".

A further EU framework programme H2020 funded project started: COOP_Plus "Cooperation of research infrastructures to address global challenges in the environmental field".

EISCAT is currently participating in four H2020 projects. EISCAT leads, as single beneficiary, the EISCAT3D_PfP project and is partner in the other three projects, COOP_Plus, EGI-Engage and ENVRI_Plus. In addition, EISCAT leads the VR-OG project, funded by Vetenskapsrådet, Sweden and participates in the collaborative NeIC project.

The EISCAT3D_PfP project is now in its second, and final year. Its purpose is to bring the EISCAT_3D concept to industry and have delivery of the first initial units which will be assembled and tested for the first time in an integrated mode. After extensive system modelling work, three main procurement items, First Stager Receiver Unit (FSRU), Antenna Unit (AU) and the Pulse and Steering Control Unit (PSCU), were opened to industry for bids. National Instruments Corporation (with affiliate companies) was selected for the FRSU delivery. Huber+Suhner, represented by its UK branch, was selected as the AU provider. Bids were also received for the PSCU but all were substantially above the expected/budgeted funding target and, hence, the PSCU contract could not be awarded to any of the bidders. A limited-capability prototype version of the PSCU will instead be built in-house by the EISCAT project staff. The FSRU and AU will be delivered to EISCAT Tromsø, where the integrated tests will be performed, during June-July 2017. Additional hardware needed will both be purchased and made in-house, including the PSCU, before the testing starts. The installation of all components will be done May-July followed by a short test period scheduled for August. The EISCAT3D_PfP project ends 31 August 2017.

The work of the Council and its committees
The Council had two ordinary meetings and one follow-up teleconference meeting during the year. The spring meeting was held 1-2 June, at the Arctic University of Norway, Tromsø and included site visits to both the EISCAT Tromsø site and the potential EISCAT_3D site in Skibotn. The autumn meeting was held 2-3 November at Saint Cross College, Oxford, UK. A follow-up Skype meeting was held 14 December. All Council meetings were chaired by Dr. Ian McCrea. The Council work was related both to regular affairs and EISCAT_3D. The follow-up meeting were only about EISCAT_3D funding considerations. The new EISCAT agreement has now been signed by all Associates but one, United Kingdom.

The Scientific Oversight Committee had two meetings during the year. The spring meeting was held 25-26 February, at the University of Oulu, Finland and the autumn meeting was held 14-

15 September, at the Arctic University of Norway. Both meetings were chaired by the Chairperson, Dr. Thomas Ulich.

The adHoc established Administrative and Finance Committee had two meetings during the year. On 27 April, at the Academy of Finland, Helsinki and 12 October, at Weetwood Hall Conference and Hotel, Leeds, UK. The meetings were chaired by Mrs. Meri Vannas.

The EISCAT_3D funding negotiations continued during 2016 and two Associate level round table meetings were held. In January and in November. The EISCAT_3D funding position did not change during the year.

Budget development during the year

The 2016 operations ended slightly over the operating target set for the year. The user demand remain much on the mainland systems. The Svalbard system ran both more common programmes and more system-demanding modes than usual causing a higher electricity use per hour than budgeted.

The overall spend followed otherwise well the prediction for the year and the regular income was close to forecasted. Income from project work became better than budgeted.

In total, the year ended in a deficit which had to be covered by own reserves.

The long-term budget plan

The long-term budget plan continues to be challenging but manageable, in short-term. The five years plan is balanced 2017 - 2020 and the operations will be around 2 500 hours per year during this period. The construction of EISCAT_3D will most probably start in 2017 and will take five years to complete. The current five years plan do not take this construction, and later operations of the new facilities into account.

The result for 2016 and profit/loss handling

The year was balanced by transferring 791 kSEK from the Surplus fund.

PROFIT AND LOSS ACCOUNTS

in thousands of Swedish Crowns

		2016	***2015***
	Note 1		
Associate contributions	Note 2	22 248	23 080
Other operating income		17 250	6 631
		39 498	29 711
Operation costs		-10 276	-5 529
Administration costs		-4 033	-3 767
Personnel costs	Note 3	-21 375	-18 306
Depreciation of fixed assets		-1 983	-1 802
		-37 667	-29 404
Operating profit/loss		*1 831*	*307*
Interest income		6	89
Other financial income and cost		1 004	-325
Own reserves and funds	Note 4	-5 614	231
		-4 605	-5
Profit/loss after financial items		*-2 774*	*302*
Appropriations	Note 5	791	-2 104
Transfer from funds invested	Note 6	1 983	1 802
		2 774	-302
Net profit/loss for the year		*0*	*0*

BALANCE SHEET

in thousands of Swedish Crowns

		2016	2015
ASSETS			
Fixed assets			
Tangible fixed assets	Note 7		
Buildings		2 033	2 265
Radar systems		4 549	5 084
Equipment and tools		2 837	2 847
		9 419	10 196
Current assets			
Receivables		2 385	1 598
Prepayments and accrued income	Note 8	8 530	2 505
Cash at bank and in hand	Note 9	36 318	37 041
		47 233	41 145
Total assets		*56 652*	*51 341*
CAPITAL AND LIABILITIES			
Capital			
Funds invested	Note 10	9 419	10 196
Funds held on reserve	Note 11	19 859	16 241
		29 277	26 437
Current liabilities			
Liabilities, trade	Note 12	26 946	24 586
Other liabilities		429	318
		27 374	24 903
Total capital and liabilities		*56 652*	*51 341*

STATEMENT OF CASH FLOWS

in thousands of Swedish Crowns

	2016	***2015***
Operating activities		
Operating result before financial items	1 831	307
Transfer from funds invested	1 983	1 802
Interest received	6	89
Currency exchange rate changes	1 004	-392
Extra ordinary income and cost	0	67
Increase/decrease of receivables	-786	3 879
Increase/decrease of prepayments and accrued income	-6 025	5 534
Increase/decrease of creditors and liabilities	2 471	4 239
Cash flow from operations	*482*	*15 524*
Investment activities		
Investments in tangible assets	-1 206	-1 443
Cash flow from investment activities	*-1 206*	*-1 443*
Cash flow for the year	*-723*	*14 082*
Liquid assets at the beginning of the year	*37 041*	*22 959*
Liquid assets at the end of the year	*36 318*	*37 041*

NOTES

Note 1 *Accounting principles*

The accounting and valuation principles applied are consistent with the provisions of the Swedish Annual Accounts Act and generally accepted accounting principles (bokföringsnämnden allmänna råd och vägledningar).

All amounts are in thousands of Swedish kronor (SEK) unless otherwise stated.

Receivables

Receivables are stated at the amounts estimated to be received, based on individual assessment.

Receivables and payables in foreign currencies

Receivables and payables in foreign currencies are valued at the closing day rate. Where hedging measures have been used, such as forwarding contracts, the agreed exchange rate is applied. Gains and losses relating to operations are accounted for under other financial income and cost.

Bank accounts in foreign currencies

Bank balances in foreign currencies are valued at the closing day rate.

Fixed assets

Tangible fixed assets are stated at their original acquisition values after deduction of depreciation according to plan. Assets are depreciated systematically over their estimated useful lives. The following periods of depreciation are applied: Buildings 5 - 50 years, Radar systems 3 - 20 years and Equipment and tools 1 - 5 years.

Note 2 *Associate contributions*

The Associates contributed to the operation during the year in accordance with the agreement. The commitments are in local currencies. The received contributions have been accounted in SEK.

	2016
CRIRP (P. R. of China)	3 781
NIPR (Japan)	1 667
RCN (Norway)	5 096
SA (Finland)	3 522
NERC (United Kingdom)	2 512
VR (Sweden)	5 670
	22 248

Accumulated contributions status as of 2016-12-31

In 2016, United Kingdom, were credited 101 kSEK for providing recurrent related funds (Heating transmitter tube repair)

	1976 - 2016
Previous Associates	382 168
CRIRP (P. R. of China)	33 413
NIPR (Japan)	78 189
RCN (Norway)	172 861
SA (Finland)	81 980
NERC (United Kingdom)	234 228
VR (Sweden)	153 907
	1 136 747

Note 3 *Personnel costs and average number of employees*

The Association employs directly the Headquarters staff, currently about eleven positions, including the Director. Of these, five are on shorter-term project employments. The Headquarters is located in Kiruna, Sweden. The personnel working at the Kiruna (Sweden), Sodankylä (Finland), Svalbard and Tromsö (Norway) sites are normally not employed by the Association.

	2016	***2015***
Instead, the personnel are provided via site contracts by the Swedish Institute of Space Physics (Kiruna site staff), Oulu University (Sodankylä staff) and the Arctic University of Norway (Tromsö and Svalbard staff). The Association refunds all expenses related to the provided staff, as well as an additional overhead.		
Personnel costs in total		
Salaries and emoluments paid to the Director	1 831	1 522
Other personnel, employed and provided via site contracts	13 078	11 288
Social security contributions amounted to	5 920	5 060
of which for pension costs	2 986	2 719

The Director, Dr. Craig Heinselman, started his employment 2013-01-01. His current employment contract ends 2018-12-31.

Of the pension costs, 295 kSEK (291 kSEK) relates to the Director. He and all other directly employed staff are included in ITP like occupational pension plans. For the personnel provided via site contracts, the pension plans are handled by their respective employer.

The members of the board (EISCAT Council) and members of committees, who represents Associates, do not receive remunerations from the Association. Travel expenses in connection with Council and committee meetings are normally covered by the Associates.

Salaries and emoluments and average number of staff per country

Finland		
Salaries and emoluments	655	634
Average number of staff - men and women	1 + 0	1 + 0
Norway (including Svalbard)		
Salaries and emoluments	5 924	5 318
Average number of staff - men and women	10 + 0	9 + 0
Sweden		
Salaries and emoluments	8 331	6 858
Average number of staff - men and women	10 + 2	8 + 2

Members of the board and Directors at year-end - men and women

The board consist of delegations from every Associate country each having a Delegate (formal member) and up to two Representatives.

Board members (EISCAT Council)	12 + 3	11 + 3
Directors	1 + 0	1 + 0

Note 4 *Own reserves and funds*

Transactions involving own reserves and funds.

Capital Operating reserve		
Transfer to the reserve	-1 493	-765
Transfer from the reserve	958	1 423
Investments made	-1 206	-1 443
Spare parts reserve		
Transfer to the reserve	-7	-7
Transfer from the reserve	4	8

	2016	2015
Surplus fund		
Transfer from the fund	0	1 015
Transfer to the fund	-3 870	0
Sum own reserves and funds	*-5 614*	*231*

Note 5 *Appropriations*

The outcome for this year became a deficit relative to the budget amounting to -791 kSEK. The loss was covered by a transfer from the suplus fund. The 2015 outcome resulted in a surplus (2 104 kSEK), which was transferred to the surplus fund.

Note 6 *Transfer from funds invested*

The depreciation cost is covered by funds from Capital - funds invested

Note 7 *Tangible fixed assets*

Changes in tangible fixed assets during 2015.

Buildings		
Opening acquisition value	42 471	42 413
Acquisitions during the year	0	58
Disposals during the year	0	0
Closing acquisition value	42 471	42 471
Opening accumulated depreciation	-40 207	-39 976
Depreciations during the year	-232	-231
Disposals during the year	0	0
Closing accumulated depreciation	-40 439	-40 207
Closing residual value	2 033	2 265
Radar systems		
Opening acquisition value	250 087	250 087
Acquisitions during the year	172	0
Disposals during the year	0	0
Closing acquisition value	250 259	250 087
Opening accumulated depreciation	-245 002	-244 322
Depreciations during the year	-707	-681
Disposals during the year	0	0
Closing accumulated depreciation	-245 709	-245 002
Closing residual value	4 549	5 084
Equipment and tools		
Opening acquisition value	32 902	32 649
Acquisitions during the year	1 034	1 384
Disposals during the year	92	1 131
Closing acquisition value	33 844	32 902
Opening accumulated depreciation	-30 055	-30 295
Depreciations during the year	-1 044	-891
Disposals during the year	92	1 131
Closing accumulated depreciation	-31 008	-30 055
Closing residual value	2 837	2 847
Sum tangible fixed assets	*9 419*	*10 196*

Note 8 *Prepayments and accrued income*

Resources in staff and direct costs spent in ongoing externally funded projects are covered by accrued income until settled by periodic report claims. In 2016, the MISW project ended and one new, COOP_Plus, started.

	2016	2015
Prepaid rents	13	13
Prepaid insurances	607	633
Accrued income, COOP_Plus project	93	0
Accrued income, EGI-Engage project	348	364
Accrued income, EISCAT3D_PfP project	5 198	491
Accrued income, ENVRI_Plus project	561	222
Accrued income, MISW project	0	254
Accrued income, VR-OG project	1 626	329
Other items	84	199
	8 530	2 505

Note 9 *Bank balances status*

Nordea	36 317	37 040
Cash in hand	1	1
	36 318	37 041

Note 10 *Funds invested status*

Buildings	2 033	2 265
Radar Systems	4 549	5 084
Equipment and Tools	2 837	2 847
	9 419	10 196

Note 11 *Funds held on reserve*

Regular investments became lower than budgeted since we did not need to add further disk capacity to the data archive. Instead we make use of a tape archive provided by the Norwegian national infrastructure for computational science. The deficit for this year (-791 kSEK) was covered by the surplus fund. The other transfers were as budgeted.

Capital operating reserve	1 942	1 407
Equipment repair fund	754	754
Investment fund	7 753	7 753
Restructuring reserve	4 101	4 101
Spare parts reserve	125	122
Surplus fund	5 183	2 104
	19 859	16 241

Note 12 *Liabilities, trade*

All externally funded projects work with prefinancing. For European Commission projects, these are in EUR's. The prefinancing is used to cover reported and approved costs. The MISW project was financially reported during the year but the final settlement will only happen in 2017. The COOPEUS and ESPAS projects were settled during the year. Prefinancing for the new project, COOP_Plus, was received.

COOPEUS FP7 prefinancing	0	1 490
COOP_Plus H2020 prefinancing	1 181	0
EGI-Engage H2020 prefinancing	479	461
EISCAT3D_PfP H2020 prefinancing	13 406	12 909
ENVRI_Plus H2020 prefinancing	1 480	1 425
ESPAS FP7 prefinancing	0	468
MISW FP7 prefinancing	570	548
VR-OG prefinancing	4 000	4 000
Liabilities, trade	5 830	3 286
	26 946	24 586

Tokyo 2017-05-31

Dr. Tomas Andersson

Dr. Mervyn Freeman

Prof. Ingrid Mann

Prof. Hiroshi Miyaoka

Dr. Kati Sulonen

Prof. Jian Wu

Dr. Craig Heinselman
Director

Our audit report was issued on 2017-06-15.

Mrs. Annika Wedin
Authorised Public Accountant

Auditor's report

To the council of EISCAT Scientific Association, corporate identity number 897300-2549

Report on the annual accounts

Opinion

I have audited the annual accounts of EISCAT Scientific Association for the year 2016.

In my opinion, the annual accounts have been prepared in accordance with the Annual Accounts Act and present fairly, in all material respects, the financial position of EISCAT Scientific Association as of 31 December 2016 and its financial performance and cash flow for the year then ended in accordance with the Annual Accounts Act. The statutory administration report is consistent with the other parts of the annual accounts.

Basis for Opinion

I conducted my audit in accordance with International Standards on Auditing (ISA) and generally accepted auditing standards in Sweden. My responsibilities under those standards are further described in the *Auditor's Responsibilities* section. I am independent of EISCAT Scientific Association in accordance with professional ethics for accountants in Sweden and have otherwise fulfilled my ethical responsibilities in accordance with these requirements.

I believe that the audit evidence I have obtained is sufficient and appropriate to provide a basis for my opinion.

Responsibilities of the council and the director

The council and the director are responsible for the preparation of the annual accounts and that they give a fair presentation in accordance with the Annual Accounts Act. The council and the director are also responsible for such internal control as they determine is necessary to enable the preparation of annual accounts that are free from material misstatement, whether due to fraud or error.

In preparing the annual accounts, the council and the director are responsible for the assessment of the association's ability to continue as a going concern. They disclose, as applicable, matters related to going concern and using the going concern basis of accounting. The going concern basis of accounting is however not applied if the council and the director intends to liquidate the association, to cease operations, or has no realistic alternative but to do so.

Auditor's responsibility

My objectives are to obtain reasonable assurance about whether the annual accounts as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes my opinions. Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with ISAs and generally accepted auditing standards in Sweden will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these annual accounts.

As part of an audit in accordance with ISAs, I exercise professional judgment and maintain professional scepticism throughout the audit. I also:

- Identify and assess the risks of material misstatement of the annual accounts, whether due to fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that is

sufficient and appropriate to provide a basis for my opinions. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control.

- Obtain an understanding of the association's internal control relevant to my audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the association's internal control.
- Evaluate the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by the council and the director.
- Conclude on the appropriateness of the council's and the director's use of the going concern basis of accounting in preparing the annual accounts. I also draw a conclusion, based on the audit evidence obtained, as to whether any material uncertainty exists related to events or conditions that may cast significant doubt on the association's ability to continue as a going concern. If I conclude that a material uncertainty exists, I am required to draw attention in my auditor's report to the related disclosures in the annual accounts or, if such disclosures are inadequate, to modify my opinion about the annual accounts. My conclusions are based on the audit evidence obtained up to the date of my auditor's report. However, future events or conditions may cause the association to cease to continue as a going concern.
- Evaluate the overall presentation, structure and content of the annual accounts, including the disclosures, and whether the annual accounts represent the underlying transactions and events in a manner that achieves fair presentation.

I must inform the council, among other matters, the planned scope and timing of the audit. I must also inform of significant audit findings during my audit, including any significant deficiencies in internal control that I identified.

Report on other legal and regulatory requirements

Opinion

In addition to my audit of the annual accounts, I have also audited the administration of the council and the director of EISCAT Scientific Association for the year 2016. The council and the director have not acted in contravention of the statutes.

Basis for Opinion

I conducted the audit in accordance with generally accepted auditing standards in Sweden. My responsibilities under those standards are further described in the *Auditor's Responsibilities* section. I am independent of EISCAT Scientific Association in accordance with professional ethics for accountants in Sweden and have otherwise fulfilled my ethical responsibilities in accordance with these requirements.

I believe that the audit evidence I have obtained is sufficient and appropriate to provide a basis for my opinion.

Responsibilities of the council and the director

The council and the director are responsible for the association's organization and the administration of the association's affairs.

Auditor's responsibility

My objective concerning the audit of the administration, and thereby my opinion, is to obtain audit evidence to assess with a reasonable degree of assurance whether any member of the council or the director in any material respect:

- has undertaken any action or been guilty of any omission which can give rise to liability to the association, or
- in any other way has acted in contravention of the Annual Accounts Act or the statutes.

Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with generally accepted auditing standards in Sweden will always detect actions or omissions that can give rise to liability to the association.

As part of an audit in accordance with generally accepted auditing standards in Sweden, I exercise professional judgment and maintain professional scepticism throughout the audit. The examination of the administration is based primarily on the audit of the accounts. Additional audit procedures performed are based on my professional judgment with starting point in risk and materiality. This means that I focus the examination on such actions, areas and relationships that are material for the operations and where deviations and violations would have particular importance for the association's situation. I examine and test decisions undertaken, support for decisions, actions taken and other circumstances that are relevant to my opinion.

Gävle, 15 June 2017

Annika Wedin
Authorized Accountant