

## Appendix 4

Version May 2021. Approved by Council May 2021

### Ownership and Timeshare Calculation

The ownership formula (1) below gives the share of the total EISCAT capital assets owned by each Associate.

The timeshare formulas (2) - (11) below specify the allocation of time from the special programme pool to individual Associates and Affiliates.

The special programme time is first shared between Associates and Affiliates based on the relative total contributions of Associates and Affiliates, as given by formulas (2) and (3).

An individual Associate's share of the total Associate share is then calculated differently (formula (4)) to an individual Affiliate's share of the total Affiliate share (formula (5)).

An exception to this is for an Affiliate who commits over 1 MSEK in a given year. In this case, a portion of their contribution and time share is treated as if that Affiliate were an Associate, as specified in formulas (6) - (11). Specifically, the first 1 MSEK of an annual Affiliate commitment X is all allocated to the Affiliate contribution A. For an annual commitment of between 1 and 2 MSEK, 50% of the amount above 1 MSEK is allocated as an Associate contribution and 50% of that amount as an Affiliate contribution. For commitments over 2 MSEK, the amount above 2 MSEK is allocated 100% as an Associate contribution. In each case, the allocation to the Associates contribution is an average of the commitment and past contributions over the D years up to and including the current year.

**Ownership Formula for Associates:**  $O = C / \Sigma C$  (1)

**Formula for special programme division between Associates and Affiliates:**

Associates share  $\Sigma B / \Sigma [A + B]$  (2)

Affiliates share  $\Sigma A / \Sigma [A + B]$  (3)

**Individual share of Associates share:**  $S_{\text{Associate}} = [C + B * D] / \Sigma [C + B * D]$  (4)

**Individual share of Affiliates share:**  $S_{\text{Affiliate}} = A / \Sigma A$  (5)

**Contribution formulas for Affiliates (all values in MSEK):**

For  $X < 1$  MSEK

$A = X$  (6)

$B = 0$  (7)

For  $1 \text{ MSEK} < X < 2 \text{ MSEK}$

$A = 1 + 0.5(X - 1) = 0.5 + 0.5X$  (8)

$B = 0.5(\bar{X} - 1)$  (9)

For  $X > 2$  MSEK

$A = 1.5$  (10)

$B = 0.5 + \bar{X} - 2 = \bar{X} - 1.5$  (11)

## Where:

- O = Individual Associate's ownership share
- $T_{\text{Associate}}$  = Individual Associate's share of special programme time on the combined facilities
- $T_{\text{Affiliate}}$  = Individual Affiliate's share of special programme time on the combined facilities
- A = All or part of annual Affiliate contribution based on formulas (6) - (11)
- B = Annual committed contribution by an Associate for the coming [D] years or part of annual Affiliate contribution over the previous [D] years based on formulas (6) - (11)
- C = Sum of individual Associate's annual contributions to capital investment, depreciated over 30 years from the date when the investment becomes operational, plus sum of annual contributions to capital operating, depreciated over 5 years, plus Joining Fee (or other additional voluntary contributions), depreciated over 30 years
- D = Number of future years for which the Associate's commitment is made, or number of consecutive years for which the Affiliate's earlier contributions are averaged
- X = Annual commitment from an Affiliate
- $\bar{X}$  = Annual average contribution from an Affiliate over the D years up to and including the current year

## Example distribution:

Based on 2 501 hours<sup>3</sup> of active mode observing time and contributions as stated below:

*Distribution of hours between the different active modes and systems (target for 2021)*

Hours	Distribution	System			Total
		E3D	Other <sup>2</sup>	Svalbard	
Special Programmes	54,02%	0	907	444	1 351
Common Programmes	35,99%	0	504	396	900
Peer review programmes	8,00%	0	112	88	200
EISCAT hours <sup>3</sup>	2,00%	0	28	22	50
Other hours	0,00%	0	0	0	0
<b>Total</b>	<b>100,00%</b>	<b>0</b>	<b>1 551</b>	<b>950</b>	<b>2 501</b>

<sup>2</sup> Heating, UHF and VHF radars

<sup>3</sup> System tests and staff time

## Calculation of timeshare and ownership:

*Timeshare and ownership calculation - Associates*

Formula Associates	Capital Total		Committed Contributions			T=C+B*D/ΣC+B*D Timeshare	O=C/ΣC Ownership
	Gross	C Net	B in kSEK	D for (years)	In total		
Previous Associates	106 168	4 269					
CRIRP (P. R. China)	4 194	1 608	3 944	5	19 718	5,06%	0,53%
NIPR (Japan)	58 952	23 654	1 972	5	9 860	7,95%	7,82%
RCN (Norway)	122 011	65 873	5 616	5	28 082	22,29%	21,77%
SA (Finland)	58 084	37 751	4 006	5	20 030	13,71%	12,48%
UKRI (United Kingdom)	140 255	76 222	2 569	5	12 844	21,13%	25,19%
VR (Sweden)	133 780	97 484	5 670	5	28 350	29,86%	32,22%
New Associate	0	0	0	0	0	0,00%	0,00%
New Associate	0	0	0	0	0	0,00%	0,00%
<b>Total All Associates</b>	<b>(623 443)</b>	<b>(306 862)</b>					
Current Associates only	517 275	302 593	23 777		118 885	100,00%	100,00%

<sup>3</sup> Active mode (transmitting), regular hours. Calculation based on 2020 data.

## Distribution of Special Programme time between Associates and Affiliates:

*Special programme time is distributed between Associates and Affiliates as follows*

Type	Timeshare	Hours
Associates	94,23%	1 273
Affiliates	5,77%	78
Total	100,00%	1 351

*Special Programme time distribution within the Associates category*

Associates	Timeshare	Hours
AA (All Associates)	n/a	100
CRIRP (P. R. China)	5,06%	59
NIPR (Japan)	7,95%	93
RCN (Norway)	22,29%	262
SA (Finland)	13,71%	161
UKRI (United Kingdom)	21,13%	248
VR (Sweden)	29,86%	350
New Associate	0,00%	0
New Associate	0,00%	0
Total	100,00%	1 273

*Special Programme time distribution within the Affiliates category*

Affiliates	Timeshare	Hours
CNRS-IRAP, France	8,42%	7
DLR-SO, Germany	37,87%	30
IRA-NASU, Ukraine	6,52%	5
JHUAPL, USA	5,96%	5
KASI, S. Korea	17,18%	13
KOPRI, S. Korea	24,05%	19
New Affiliate	0,00%	0
New Affiliate	0,00%	0
Total	100,00%	78