ADDITIONAL INFORMATION TO REPORTING TABLES 1 – TOTAL COSTS AND UNIT COSTS

1. Determined costs and unit costs

a) Description of the methodology used for allocating costs of facilities or services between different air navigation services, based on the list of facilities and services listed in ICAO Regional Air Navigation Plan, European Region (Doc 7754) as last amended, and a description of the methodology used for allocating those costs between different charging zones;

Fintraffic ANS (ANS Finland's name was 1.1.2021 changed to Fintraffic ANS) provides a) enroute services, b) terminal navigation services in Helsinki-Vantaa airport, c) terminal navigation services for Finavia's network airports and d) training services. Cost allocation principles are following: enroute cost base includes all ACC costs, 40% of Helsinki-Vantaa airport's ANS cost (TWR/APP) and 40% of ANS cost of 4 other airports, which have separate APP (Rovaniemi, Kuopio, Jyväskylä and Tampere).

Cost of technical ANS, administration and other centralized services are allocated to different cost bases by sharing keys, which differ by cost centers.

ANSP's reported costs by nature and by services are based on Fintraffic ANS's internal accounting and reporting system. Reported costs are based on ICAO's Regional Air Navigation Plan (Doc 7754).

b) Description of the methodology and assumptions used to establish the costs of air navigation services provided to VFR flights, when exemptions are granted for VFR flights in accordance with Article 31(3), 31(4) and 31(5);

Cost of VFR-fights are estimated by multiplying service units of VFR flights (from CRCO report) by enroute unit rate.

c) Criteria used to allocate costs between terminal and en route services, in accordance with Article 22(5);

Fintraffic ANS's costs are allocated to terminal and en route cost bases according to following principles

a) All ACC cost are allocated to en route cost base
b) All TWR cost are allocated to terminal cost base
c) APP cost are allocated to en route and terminal cost bases according to distance based rule.
a. Costs related to flight 0-20km from the airport are in terminal cost base
b. Costs related to flight over 20km from airport are in en route cost base.
c. 20 km has been chosen because according to charging regulation 20km is deducted from chargeable en route flight in both ends of the flight
d. For practical reasons costs of APP and TWR are in the same cost center. 40% of total TWR/APP costs are allocated to en route and 60% to terminal.
d) Costs of services common to both en route and terminal services are allocated in proportional way. These services include for example technical ANS, AIS and administration.

d) Breakdown of the meteorological costs between direct costs and the costs of supporting meteorological facilities and services that also serve meteorological requirements in general ('MET core costs'). MET core costs include general analysis and forecasting, surface and upper-air observation networks, meteorological communication systems, data processing centres and supporting core research, training and administration;

The cost accounting system of the Finnish Meteorological Institute (FMI) follows the principles of ABC (Activity-Based Costing). Method was implemented in 1995 and thus is the same principle as in RP2. The costs of FMI are divided into two categories, direct costs and costs supporting meteorological facilities (indirect costs or MET core costs). Direct costs are assigned directly to the project in question. This assignment happens already in the book-keeping system of FMI. Direct costs can be labor costs and/or operational costs. The amount of labor costs consist of actual civil aviation labor input, working hours, which are recorded monthly to the working hour registry KIEKU.

There are two types of core cost items at FMI:

1. Costs of support services (general IT-infrastructure services, general training, financial and personnel administration etc.)
2. Unit-level costs (general management, public relations and internal communications, premises, electricity & water, office supplies and other unit-level costs)

The allocation of indirect costs/core costs to aviation has been made by using percentages. The more the unit is producing aviation services the higher the percentage is. The percentage is related to direct working hours. MET core costs are costs of infrastructure and supporting services, also met-institutes head office costs like International organizations member fees (EUMETSAT and WMO) are included in core costs. Core costs include both fixed and variable costs. Core costs can be labour and/or operational costs. Furthermore, the costs related to weather observations (including radar observations) are not included in these costs. The costs of observations are covered by the Finnish government budget funds.

e) Description of the methodology used for allocating total meteorological costs and MET core costs referred to in point (d) to civil aviation and between charging zones;

The allocation of costs is based on the method described in the part d.

f) For each entity, description of the composition of each item of the determined costs by nature and by service (points 1 and 2 of Table 1), including a description of the main factors explaining the planned variations over the reference period;

Determined costs by nature and by service

Entity: Fintraffic ANS	
1. Detail by nature (in nominal terms)	
1.1 Staff costs	Staff costs of certain cost centers according to allocation principles accepted by NSA. Staff costs include salaries, social security charges and pension costs. In 2020 enroute staff costs were 15,8% (3,4M€) lower than in 2019. This saving was achieved mainly by temporary lay-offs and abandoning bonuses. In 2021 staff costs are expected to grow by 1,9%. In 2022 staff costs are expected to return to normal level (level before Covid-19). In 2023 and 2024 Staff costs are expected to grow about 4,5% due to traffic increase. One driver for the change is that ATCOs in Fintraffic ANS are older than before which increases age bonuses. Fintraffic ANS age bonus scheme increases total salaries. This scheme applies to ATCOs and the average employee age is over 46 at the moment. The age bonus rises salaries every 4, 8, 11, 15 and 20 year one being employed. Collective bargaining for years 2023-2024 is still ongoing and there isn't exact information for the general salary increases available yet.

	It's also challenging to prepare for retirement in a timely manner. To avoid lack of personnel the recruitment and training of substitutes must begin well in advance. This causes occasionally overlapping resources.
of which, pension costs	Pension cost are expected to increase during RP3, because of increase in wages. Pension contributions are based on the gross wages. Employer % contribution rate is expected to be 16,95% in 2021 and 17,35% in 2022-2024. This estimate is made by the Finnish Centre for Pension.
1.2 Other operating costs	Other operating costs include costs of material and services and other operating expenses. Main costs include ATM system and ICT costs, rents of premises, leasing cost of ANS assets and leasing costs of telecommunication lines. Other operating costs include also administrative costs of Fintraffic Group. These costs are related to ICT, HR, Financial services etc. In 2020 other operating costs were 5,9% lower than in 2019 due to Covid-19 savings. In 2021 costs are expected to increase by 8,0%, in 2022 by 10,1%, in 2023 by 5,4% and in 2024 by 5,9%. Drivers for these changes are increases in travelling costs, payments to airport operator at Helsinki-Vantaa APP, cyber security and IT-security development costs and inflation. Costs of communication lines are increasing due to CPDLC enlargement to northern part of Finland. Management fee of Fintraffic is also expected to increase. Also the expansion of Datalink (SITA+ARINC) increases significantly deployment and maintenance costs.
1.3 Depreciation	Depreciations of new and existing ANS assets according to Fintraffic ANS's investment plan. Depreciations are expected to increase because of new investments. Depreciations are based on Fintraffic ANS's investment plan. Depreciations are planned to increase from 3,4M€ in 2020 to 4,5M€ in 2024. For RP3 Fintraffic ANS has planned many investments that will answer to capacity, safety and regulatory requirements (such as Regulation No 1207/2011 (requirements for the performance and the interoperability of surveillance for the single European sky) and Regulation No 2150/2005 (Implementation and Application of the Flexible Use of Airspace)), and is also improving cross-border cooperation with Estonia (FINEST project). Also European Implementation Plan (for example COM-11, ATC1.1) creates a demand for new investment projects for RP3. Main investments by service categories: <u>SUR:</u> - Replacement of four existing en-route conventional radars - Deployment of Wide Area Multilateration - SMR and MLAT system evolution and system upgrade due to end-of-life and changes in Helsinki-Vantaa airport infrastructure <u>ATM:</u> - IP-ATM network infrastructure with secured communication - Main ATM system evolution for dynamic cross-border service provision, safety nets and monitoring aids - ASM system upgrade to comply with effective and dynamic airspace management - Implementation of ADQ compliant AIM system - ATM system evolution for enhanced surface management, monitoring and runway safety - Hardware renewals due to end-of-life for main ATM system both in operational and training environment <u>COM:</u> - Deployment of VoiP VCS system and radio equipment for new channel spacing requirement - IP-aviation network infrastructure with secured communication - DLS service extention - Services supporting the exchange of information over SWIM. <u>NAV:</u> - CNS system renewals both in en-route and busy terminal areas, mainly conventional equipment - Infrastructure evolution to comply with national NAV/SUR strategy <u>Training:</u>

	- System evolutions and hardware lifecycle renewals to comply with training of operational and technical staff
1.4 Cost of capital	Cost of capital consists of asset base and WACC. WACC before tax in this calculation is 4,3%. Asset base increases in RP3 because of planned new investments.
1.5 Exceptional items	
2. Detail by service (in nominal terms)	
2.1 Air Traffic Management	Staff costs of ATCO's. Staff costs and other operating cost of technical ANS related to ATM. Depreciations and cost of capital of ATM investments. Costs of other centralized services (administration etc)
2.2 Communication	Staff costs and other operating cost of technical ANS related to COM. Depreciations and cost of capital of COM investments.
2.3 Navigation	Staff costs and other operating cost of technical ANS related to NAV. Depreciations and cost of capital of NAV investments.
2.4 Surveillance	Staff costs and other operating cost of technical ANS related to SUR. Depreciations and cost of capital of SUR investments.
2.5 Search and rescue	Costs of aeronautical rescue coordination centre
2.6 Aeronautical Information	Costs of AIS unit and flight planning center allocated to en route service.
2.7 Meteorological services	
2.8 Supervision costs	
2.9 Other State costs	
Adjustments beyond the provisions of the International Financial Reporting Standards adopted by the Union pursuant to Regulation (EC) No 1126/2008	

Entity: FMI	
1. Detail by nature (in nominal terms)	
1.1 Staff costs	Staff costs of FMI staff members involved with civil aviation operational or development tasks in certain cost units. In general, 54% of FMI meteorological services costs are staff costs over the RP3 period. Staff costs are expected to rise by 1% on average and total FTEs expected to rise due to start of operations of the global Space Weather Centre as designated by ICAO. Staff costs include mandatory employer costs as determined by the State treasury. 2020 the determined costs are the same as the actual costs. Compared to the average set for RP3, 2020 Staff costs were higher than the determined average. This is due to increased need of manpower for number of changes in services, increase in wages and different distribution of costs between staff and operating costs from original determined costs.
of which, pension costs	Pension costs are expected to remain on average at 16,48% of total salary costs during RP3. 2020 the pension costs were 17.14%, a little bit higher than the determined average, due to increase in FMI pension costs.
1.2 Other operating costs	In RP3 on average the remaining 46% of total costs are allocated to other operating costs. These include e.g. facility costs, administration, ICT services, reasonable share of membership fees to international organisations and outsourced services such as telecommunication lines to AFTN/AMHS centre. 2020 the determined costs are the same as the actual costs. Compared to the average set for RP3, 2020 other operating costs were lower than determined average due to different distribution of costs between staff and operating costs from original determined costs.
1.3 Depreciation	
1.4 Cost of capital	
1.5 Exceptional items	
2. Detail by service (in nominal terms)	
2.1 Air Traffic Management	
2.2 Communication	
2.3 Navigation	
2.4 Surveillance	
2.5 Search and rescue	

2.6 Aeronautical Information	
2.7 Meteorological services	All FMI costs are allocated to meteorological services. Staff costs and operational costs of aeronautical meteorological forecast and warning centers, technical and support staff. Cost of operational centers, quality, compliance and development activities. Requirement for services imposed by (EU)2017/373 regulation, the Competent Authority and ICAO Annex 3, the overall staff cost regulations of the Finnish State and cost of services purchased from suppliers. Within the RP3 timeframe FMI cost-efficiency is influenced by the increase of regional and global services imposed by the regulation and ICAO designation of Space Weather Centres. Cost-efficiency is also affected by increasing staff costs, pension costs and cost increases in sub-contracted services, all contributing to small increases in overall costs. Operating costs for new services included in the Performance Plan for RP3 contribute positively to the overall productivity of FMI and increase total costs from 2020 onwards. FMI is the Lead Member and operational centre of the Pan-European Consortium for Aviation Space Weather User Services (PECASUS), responsible for the management of the consortium and global dissemination of Space Weather Advisories. As one of three global Space Weather Centres, PECASUS is actively developing new services to mitigate impacts of hazardous space weather events to aviation. FMI Space Weather operations are funded by the Finnish State for the first three years of operations 2019-2021 after which the operational costs will be part of FMI MET costs from 2022 onwards, resulting in an increase in total costs annually.
2.8 Supervision costs	
2.9 Other State costs	
Adjustments beyond the provisions of the International Financial Reporting Standards adopted by the Union pursuant to Regulation (EC) No 1126/2008	

Entity: Traficom	
1. Detail by nature (in nominal terms)	
1.1 Staff costs	50 % of the supervision costs are assessed to result from direct staff costs.
of which, pension costs	
1.2 Other operating costs	The other 50 % are assessed to be other operating costs which mainly consist of the agency's overhead costs. 100 % of the Eurocontrol costs are other operating costs.
1.3 Depreciation	
1.4 Cost of capital	
1.5 Exceptional items	
2. Detail by service (in nominal terms)	
2.1 Air Traffic Management	
2.2 Communication	
2.3 Navigation	
2.4 Surveillance	
2.5 Search and rescue	
2.6 Aeronautical Information	
2.7 Meteorological services	
2.8 Supervision costs	All the NSA costs are allocated to supervision costs. The nominal costs are planned to remain the same through the entire reference period. NSA costs include Traficom's infrastructure oversight charges. The charges are based on Act on Criteria for Charges Payable to the State and the target is that they are cost-reflective. NSA costs in enroute cost base consist from five airports which have APP control. 40 % of those airport's infrastructure oversight charges are allocated to Enroute cost base. In RP2 the method for charging each ATS-unit was based on the number of passengers. This method is being renewed for RP3 and the method is based on the number of IFR movements which reflects better the actual size of the ATS-unit and oversight work. This adjustment has increased the amount of NSA cost in enroute cost base comparing to RP2.
2.9 Other State costs	Eurocontrol costs
Adjustments beyond the provisions of the International Financial Reporting Standards adopted by the Union pursuant to Regulation (EC) No 1126/2008	

Pension costs

Note: The determined pension costs of the main ANSPs are detailed and justified in the body of the performance plan (item 3.4.3)

Entity: Fintraffic and FMI

Assumptions underlying the determined pension costs and expected evolution over Reference Period 3

The statutory pension security in Finland consists of defined benefit earnings-related pension that accrues from work, as well as residence-based national pension and guarantee pension that ensure minimum security. In Finland, the earnings-related pension is a statutory benefit for the employee. The employer is liable to arrange pension insurance.

The employer arranges pension security for his employees from a pension provider of his own choosing. The employer can take out statutory pension insurance for the employees with a pension insurance company or with an industry-wide pension fund, or by establishing a company pension fund. State employers pay their contributions to the State Pension Fund.

Both the employer and the employee pay pension contributions based on the gross wage of the wage earner. The employer levies from the employee's wage/salary the employee's share of the contribution and pays it together with the employer's own contribution to the pension provider.

Contribution is mainly affected by the employer's size, which is evaluated on the basis of the total amount of wages and salaries paid by the employer.

Employers disburse pension contributions based on the earnings of their employees to their own pension providers, who use them to finance earnings-related pensions currently on their responsibility and, on the other hand, prepare for the payment of future pensions by funding payments.

Fintraffic's pension costs are covered by the Employees' Pensions Act (TyEL). Finnish Meteorological Institute's (FMI) pension costs are covered by the Public Sector Pensions Act (JuEL).

In September 2014, the Finnish central labour market organisations and the State agreed on an extensive pension reform that came into effect as of the beginning of 2017. This reform changed the sharing keys between the employer and employee. On average, this change lowered the employer's actual contribution for both TyEL and JuEL.

Underlying assumptions:
The level of statutory earnings-related contributions depends on the level on pension benefits, the currently valid funding and financing principles as well as investment profit from pension assets. Development of the national economy and the age structure of the population also affect the need for pension contributions.

The contribution rate and changes are set yearly by the State (TyEL and JuEL) and therefore are not under the control of the entity.

Contribution rate forecasts for RP3:
NSA has received the forecasts explained below from the service providers (ANSF and FMI).
Fintraffic ANS estimate contribution rate for 2022-2024 is from the Finnish Centre for Pension's forecast 20.1.2021.

Fintraffic ANS

EN-ROUTE					
"Determined" Pension costs (in DC,nominal)	2020	2021	2022	2023	2024
Determined pensionable salary ('000€)	15 071	15 070	18 409	19 223	20 084
Nber of pensionable staff	189	189	192	195	198
% contribution rate (in DC)	14,82 %	16,95 %	17,35 %	17,35 %	17,35 %
Total pensions costs (as in DC '000€)	2 234	2 554	3 194	3 335	3 485

FMI (MET)					
EN-ROUTE					
"Determined" Pension costs (in DC,nominal)	2020	2021	2022	2023	2024
Determined pensionable salary ('000€)	1 194	1 068	1 194	1 190	1 182
Nber of pensionable staff	23	23	23	23	23
% contribution rate (in DC)	17,14 %	16,48 %	16,48 %	16,48 %	16,48 %
Total pensions costs (as in DC '000€)	204,652	176,006	196,771	196,112	194,794

g) For each entity, a description and justification of the method adopted for the calculation of depreciation costs (point 1.3 of Table 1): historical costs or current costs referred to in the fourth subparagraph of Article 22(4), and, where current cost accounting is used, provision of comparable historical cost data;

Depreciation is calculated using the straight line method on the historic cost of the assets.

In the separation of Fintraffic ANS (ANS Finland) from airport operator Finavia in 1.4.2017, it was decided that ANS assets at the airports are mainly owned by Finavia and Fintraffic ANS pays so called fixed assets-fee to Finavia for the use of these assets (leasing). Fixed assets-fee includes depreciation and cost of capital of Finavia and it is reported in Fintraffic ANS's other operating cost. This change increases the other operating costs and decreases depreciations and cost of capital.

Fintraffic ANS provides services in rented premises so the depreciations do not include depreciations of buildings.

h) For each entity, description and underlying assumptions of each item of complementary information (point 3 of Table 1), including a description of the main factors explaining the variations over the reference period;

Fintraffic ANS	
Costs of new and existing investments (see also performance plan item 2)	
3.10 Depreciation	Covered in item f) above
3.11 Cost of capital	WACC before taxes (4,3%) is based on the calculation provided by the KPMG. In WACC calculation it has been assumed that 26,84% is financed via debt.
3.12 Cost of leasing	To Finavia Fintraffic ANS pays "fixed assets-fee" for the use ANS assets owned by Finavia. Rent is based on depreciation and cost of capital of these assets. In the case of new investments Fintraffic ANS suggests new ANS investments for Finavia and Finavia makes final decision of the implementation. Fintraffic ANS provides project management services to Finavia in these projects.

Eurocontrol costs	
3.13 Eurocontrol costs (Euro)	Eurocontrol costs 2020 and 2022-2024 are based on the figures of the Agency's cost base received from the Eurocontrol by e-mail on 21.5.2021. Eurocontrol cost for the year 2021 is the same which was received for the initial cost base reported in 15.12.2020.
3.14 Exchange rate (if applicable)	Not applicable.

i) For each entity, description of the assumptions used to compute the cost of capital (point 1.4 of Table 1), including the composition of the asset base, the return on equity, the average interest on debts and the shares of financing of the asset base through debt and equity;

During RP3 the efficient model suggested by Steer Davies Gleave in their study on cost of capital, return on equity and pension costs of air navigation service providers is used as a guidance in WACC calculation. The same model as was used for RP2. According to the study, this model will ensure cost reflective charges and align with the broad objective of economic regulation to encourage an efficient allocation of resources across the economy.

Application of this option would require the following:

- The cost of equity to be calculated using the CAPM;
- The cost of debt should be estimated by reference to market borrowing rates;
- The assumed gearing should be the optimal level rather than the level actually prevailing when the calculation is made;
- The assumed risk free rate should be set by reference to government bond yields providing financial markets are relatively stable, and by reference to an appropriate comparator such as ECB bond rates otherwise;
- The asset beta should be within a recommended range of 0.3 to 0.5 unless the ANSP is able to justify a value outside the range; and
- All components of the calculation should be identified transparently and justified.

The actual WACC calculations has been prepared by KPMG on 28.6.2019 based on closing market data at 24.6.2019 (2020-2021) and the updated calculation on 16.9.2021 (2022-2024). **Updated WACC takes into account the comments received in user consultation and PRB's paper "Study on cost of capital, Methodology review and update". This lowers WACC from previous calculation which was presented in consultation.**

Summary of updated results:

WACC calculation			
	After-tax WACC	**Pre-tax WACC**	
Cost of equity (Ke)			
Asset beta	0.55	0.55	Industry lower quartile, Refinitiv
Debt to EV Ratio (D/EV)	26.84%	26.84%	Industry lower quartile, Refinitiv
Equity to EV Ratio (1-D/EV)	73.16%	73.16%	1 - D/EV
Tax rate	20.00%	20.00%	Corporate tax rate (Finland, 2021)
Equity beta (Be)	0.71	0.71	Be = Ba * (1 + (1-t) * (D/EV) / (1-D/EV)))
Risk-free rate (i)	0.15%	0.15%	Long-term AAA-rated government bond yield (Germany), Refinitiv
Inflation differential (Δi)	0.00%	0.00%	Inflation differential to AAA-rate country, EIU
Market Risk Premium (Rm)	5.37%	5.37%	Market risk premium in AAA-rate country, Damodaran
Country Risk Premium (CRP)	0.38%	0.38%	Risk premium to AAA-rate country, Damodaran
Cost of equity (Ke), After-tax	4.34%		Ke = i + Δi + Be * Rm + CRP
Cost of equity, Pre-tax		5.43%	Pre-tax Cost of Equity = After-tax Cost of Equity / (1 - tax rate)
WACC contribution of equity	**3.18%**	**3.97%**	
Cost of debt (Kd)			
Credit spread	0.70%	0.70%	Credit spread, PRB (Study on cost of capital - Methodology review and update)
Country Risk Premium (CRP)	0.38%	0.38%	Risk premium to AAA-rate country, Damodaran
Pre-tax Required Return on Debt (Kd)	1.24%	1.24%	Kd = i + Δi + Credit spread + CRP
After-tax Required Return on Debt	0.99%		
WACC contribution of debt	**0.27%**	**0.33%**	
WACC	**3.44%**	**4.30 %**	WACC = (D/EV) * (1-t) * Kd + (1- D/EV) * Ke

Theoretical background	
Component	**Description**
WACC	■ The calculation of the weighted average cost of capital (WACC) is based on the following formula: – WACC = Ke * E / (D+E) + Kd * D / (D+E) * (1-t) with: ■ WACC = Weighted Average Cost of Capital ■ Kd = Cost of debt ■ Ke = Cost of equity ■ E = Market value of equity ■ D = Market value of interest bearing liabilities ■ D + E = EV = Entity Value (Enterprise Value) ■ t = Corporate tax rate ■ The WACC consists of the required return on equity and the required return on debt after corporate taxes. Following capital market theory, the generally accepted method of estimating the cost of equity is the Capital Asset Pricing Model (CAPM). Following the CAPM, the rate of return on equity can be constructed from the risk free interest rate and a risk premium
Cost of equity	■ The cost of equity was calculated using the Capital Asset Pricing Model (CAPM). The following formula was applied: – Ke = i + Δi + Be * Rm + CRP with: ■ Ke = Cost of equity ■ i = Risk free interest rate ■ Δi = inflation differential to AAA-rate country ■ Be = Beta factor ■ Rm = Market risk premium (Market portfolio return – risk-free rate) ■ CRP = Country risk premium compare to AAA-rated country

Theoretical background	
Component	**Description**
Risk free rate	■ We have applied Germany (Aaa-rated country) 30-year government bond yield (0.15%) as a basis for risk-free rates adjusted with difference in estimated inflation between Germany and Finland
Market risk premium	■ The market risk premium for equity is calculated from the differential yield between equity investments (shares) and risk-free investments. Capital market surveys have shown that investments in shares have historically achieved higher returns than investments in risk-free government bonds ■ In this report, the market risk premium for Aaa rated countries, such as Germany has been assumed to equal the standard market risk premium of 5.37% derived from historical market risk premium levels of 2020 and 2021 by Professor Damodaran, a leading expert on valuation from the Stern School of Business at New York University. For Aa1 rated country such as Finland, the country risk premium of 0.38% determined by professor Damodaran has been added to the aforementioned 5.37% reflecting the additional risk compared to the AAA-rated country
Capital structure and cost of debt	■ The capital structure employed (net debt to EV of 26.8%) is based on the capital structures of the publicly listed companies operating in airport, energy as well as rail / transportation industries. Lower quartile net debt to EV ratio has been calculated for each of the aforementioned peer groups. Finally, the average of these lower quartile observations has been examined, resulting to 26.8% net debt to EV ratio ■ The cost of debt can be estimated by adding the interest margin and country risk premium of the company to the risk free rate. The debt margin applied amounts to 0.7% based on the information presented in (PRB) Study on cost of capital – Methodology review and update

Theoretical background	
Component	**Description**
Corporate tax rate	■ Local corporate tax rate of Finland (20%)
Beta – market method & appropriate range	■ The beta reflects the sensitivity of company returns to market returns. In other words, it is a measure for systematic risk that cannot be diversified by investors and therefore requires a higher rate of return ■ For listed companies, equity betas can be determined by statistical analysis between their stock returns and returns of a market index. For unlisted companies, beta can be estimated based on the betas of sufficiently similar listed companies. The betas of comparable listed companies first need to be unlevered to obtain asset betas which represent the betas of the listed companies if debt-free. These asset betas can then be used as an approximation of the unlisted company's asset beta. The desired capital structure of the unlisted company is then applied to the asset beta to obtain its equity beta ■ Asset beta of 0.55 is derived from the market data of the publicly listed companies operating in airport, energy as well as rail / transportation industries. Lower quartile asset beta has been calculated for each of the aforementioned peer groups. Finally, the average of these lower quartile observations has been examined, resulting to 0.55 asset beta

Peer group market information:

Asset beta and capital structure level are derived from the peer group data consisting companies operating in the airport, energy and rail / transportation industries

Airports

Company	Country	Market cap (€m)	Enterprise value (€m)	Net debt (€m)	Tax rate	Equity beta	Net debt / EV	Asset beta
Auckland International Airport Ltd	New Zealand	6,595	7,385	790	28.0%	1.12	10.7%	1.03
Aeroports de Paris SA	France	9,667	18,073	8,406	28.0%	1.22	46.5%	0.75
Flughafen Zuerich AG	Switzerland	4,274	5,492	1,218	14.8%	1.06	22.2%	0.85
Fraport AG Frankfurt Airport Services Worl	Germany	4,922	12,049	7,127	30.0%	1.15	59.2%	0.57
Copenhagen Airports A/S	Denmark	6,442	7,920	1,478	22.0%	0.75	18.7%	0.64
Sydney Airport Holdings Pty Ltd	Australia	13,864	18,777	4,913	30.0%	1.07	26.2%	0.86
Toscana Aeroporti SpA	Italy	239	344	104	24.0%	0.79	30.3%	0.59
Flughafen Wien AG	Austria	2,412	2,755	343	25.0%	0.83	12.4%	0.75
Aena SME SA	Spain	19,845	27,298	7,453	25.0%	1.02	27.3%	0.80
						Lower quartile	18.7%	0.64
						Median	26.2%	0.75
						Average	28.2%	0.76
						Upper quartile	30.3%	0.85

Rail / transportation

Company	Country	Market cap (€m)	Enterprise value (€m)	Net debt (€m)	Tax rate	Equity beta	Net debt / EV	Asset beta
BVZ Holding AG	Switzerland	136	310	173	14.8%	0.73	56.0%	0.35
FirstGroup PLC	United Kingdom	1,241	3,999	2,757	19.0%	1.70	69.0%	0.61
FNM SpA	Italy	249	952	703	24.0%	1.02	73.8%	0.33
Go-Ahead Group PLC	United Kingdom	454	822	368	19.0%	1.65	44.8%	1.00
Jungfraubahn Holding AG	Switzerland	735	820	86	14.8%	1.03	10.5%	0.94
National Express Group PLC	United Kingdom	1,625	2,887	1,262	19.0%	1.82	43.7%	1.12
Nobina AB (publ)	Sweden	699	1,191	492	20.6%	1.05	41.3%	0.67
Stagecoach Group PLC	United Kingdom	455	831	376	19.0%	1.59	45.2%	0.95
						Lower quartile	43.1%	0.54
						Median	45.0%	0.81
						Average	48.0%	0.75
						Upper quartile	59.2%	0.96

Source: Refinitiv

Energy

Company	Country	Market cap (€m)	Enterprise value (€m)	Net debt (€m)	Tax rate	Equity beta	Net debt / EV	Asset beta
Arise AB	Sweden	155	210	55	20.6%	1.13	26.0%	0.88
Elia Group SA	Belgium	7,350	13,494	6,145	25.0%	0.70	45.5%	0.43
Enagas SA	Spain	4,933	8,526	3,593	25.0%	0.74	42.1%	0.48
EAM Solar ASA	Norway	6	10	4	22.0%	1.06	39.3%	0.71
Engie SA	France	29,204	57,555	28,351	28.0%	1.02	49.3%	0.60
Fortum Oyj	Finland	24,041	37,151	13,110	20.0%	1.15	35.3%	0.80
Italgas SpA	Italy	4,537	9,572	5,035	24.0%	0.73	52.6%	0.39
Magnora ASA	Norway	103	91	(12)	22.0%	0.96	-	0.96
National Grid PLC	United Kingdom	41,000	74,644	33,644	19.0%	0.73	45.1%	0.44
Orsted A/S	Denmark	53,404	55,414	2,010	22.0%	1.01	3.6%	0.98
Red Electrica Corporacion SA	Spain	9,268	15,104	5,836	25.0%	0.67	38.6%	0.45
RWE AG	Germany	22,645	19,824	(2,821)	30.0%	0.89	-	0.89
Snam SpA	Italy	16,746	30,918	14,172	24.0%	0.83	45.8%	0.50
Tallinna Vesi AS	Estonia	298	348	50	20.0%	0.64	14.5%	0.56
Terna Rete Elettrica Nazionale SpA	Italy	13,498	23,048	9,550	24.0%	0.75	41.4%	0.49
Uniper SE	Germany	13,178	14,488	1,310	30.0%	0.73	9.0%	0.68
United Utilities Group PLC	United Kingdom	8,487	17,509	9,022	19.0%	0.74	51.5%	0.40
Voltalia SA	France	2,223	2,887	664	28.0%	0.74	23.0%	0.61
Vinci SA	France	53,110	75,318	22,208	28.0%	1.16	29.5%	0.89
						Lower quartile	18.7%	0.47
						Median	38.6%	0.60
						Average	31.2%	0.64
						Upper quartile	45.3%	0.84

Fintraffic ANS	
Average asset base	
3.1 NBV fixed assets	NBV of fixed assets is expected to increase from 13,5 M€ in 2020 to 29 M€ in 2024 due to planned investment programme. NBV of fixed assets includes 5,8 M€ fixed assets under construction in average.
3.2 Adjustments total assets	
3.3 Net current assets	Net current assets are estimated to be 1,8-2,9M€ in RP3. Net current assets consist of Fintraffic ANS sales receivables less trade accounts payable. 50 % of these are allocated to en-route cost base.
Cost of capital %	
3.6 Return on equity	Pre-tax return on equity 4,3% is based on KPMG's calculation.
3.7 Average interest on debts	The debt margin applied amounts to 0.7% based on the information presented in (PRB) Study on cost of capital.
3.8 Share of financing through equity	WACC calculation is updated. Peer group used as a proxy for optimal gearing (share of equity 73,16%).

j) Description of the determined costs of common projects (point 3.9 of Table 1).

Fintraffic ANS					
Determined costs of common projects (in nominal terms in '000 national currency)					
CP reference	**2020**	**2021**	**2022**	**2023**	**2024**
AF3	1 730 278	2 590 659	2 967 874	3 799 040	4 713 938
AF6	0	29 059	76 064	88 603	99 127
Total (Table 1 item 3.9)	1 730 278	2 619 718	3 043 937	3 887 644	4 813 064

2. Actual costs and unit costs

a) For each entity and for each cost item, a description of the reported actual costs and the difference between those costs and the determined costs, for each year of the reference period;

As the local cost-efficiency performance targets for RP3 are currently subject to revision as part of the draft performance plans to be submitted by Member States to the Commission by 1 October 2021, in line with the exceptional measures for RP3 due to the COVID-19 pandemic (Regulation (EU) 2020/1627 of 3 November 2020), the monitoring of the 2020 actual performance is carried out against the 2019 actual performance.

The main drivers for differences between actual data for 2020 and actual data for 2019 are presented for each item of cost by nature in the tables below.

RP3 Monitoring – Year 2020 vs. 2019	
ANSP: Fintraffic ANS	
1.1 Staff costs	Enroute Staff costs in 2020 were 16% (-3,4M€) lower than in 2019. Savings include for example remarkable temporary lay-offs and abandoning bonuses.
1.2 Other operating costs	Other operating costs in 2020 were 6% (-0,6M€) lower than in 2019. There were savings for example in travel cost and payments to airport operator Finavia,
1.3 Depreciation	Depreciations in 2020 were a little bit higher than in 2019 due to implementation of investments: ATM-system TopSky, MSSR upgrades and some other smaller investments
1.4 Cost of capital	Cost of capital has increased from 2019 due to higher WACC and asset base. Pre-tax WACC in 2020 was 4,3% and it is calculated by KMPG. Asset base is higher than in 2019 due to current assets.
1.5 Exceptional items	

RP3 Monitoring – Year 2020 vs. 2019	
ANSP: MET/FMI	
1.1 Staff costs	Staff costs increased 109 000€ from 2019 to 2020. Mandatory employer costs (determined by the State treasury) have risen due to general pay rise (in August 2020) as well as the higher pension costs in 2020 among other things.
1.2 Other operating costs	Other operating costs increased 17 000€ from 2019 to 2020. The reason for the increase was the costs related to AFTN/AMHS licence. In 2020 FMI paid 60 000€ for Fintraffic ANS for the licence. The total amount of the payment is 84 000€ and the remaining amount 24 000€ will be paid in 2021.
1.3 Depreciation	
1.4 Cost of capital	
1.5 Exceptional items	

RP3 Monitoring – Year 2020 vs. 2019	
STATE/NSA: Traficom	
1.1 Staff costs	Even if these supervision cost levels are depended on the number of VFR operations, lower operation levels didn't have an effect on these costs in 2020. The ATS-units concerned remained the same supervision charge range.
1.2 Other operating costs	
1.3 Depreciation	
1.4 Cost of capital	
1.5 Exceptional items	

b) Description of the reported actual service units and a description of any differences between those units and the figures provided by the entity that is billing and collecting charges as well as any differences between those units and the forecast set in the performance plan, for each year of the reference period;

2020 actual service units were 462.058, which was 54,3 % lower than in 2019 (1.010.679).

c) Breakdown of the actual costs of common projects per individual project;

Fintraffic					
Determined costs of common projects (in nominal terms in '000 national currency)					
CP reference	2020	2021	2022	2023	2024
AF3	1 730 278				
AF6	0				
Total (Table 1 item 3.9)	**1 730 278**				

d) Justification of the difference between the determined and the actual costs of new and existing investments of the air navigation service providers, as well as the difference between the planned and the actual date of entry into operation of the fixed assets financed by those investments for each year of the reference period;

In respect of calendar year 2020, this information is to be provided in the annual monitoring report (see section 4 of the RP3 monitoring template).

e) Description of the investment projects added, cancelled or replaced during the reference period with respect to the major investment projects identified in the performance plan, and approved by the national supervisory authority in accordance with Article 28(4).

In respect of calendar year 2020, this information is to be provided in the annual monitoring report (see section 4 of the RP3 monitoring template).

ADDITIONAL INFORMATION TO REPORTING TABLES 2 – UNIT RATE CALCULATION

a) Description and rationale for establishment of the different charging zones, in particular with regard to terminal charging zones and potential cross-subsidies between charging zones;

Finland has one enroute charging zone

b) Description of the policy on exemptions and description of the financing means to cover the related costs;

Actual costs incurred in relation to services to flights exempted from ANS charges (pursuant to Article 31(3) to (5) and Article 22(6) of Implementing Regulation (EU) 2019/317) in the charging zone in 2020.

	2020
Costs for exempted VFR flights	1k€
Costs for exempted IFR flights	91k€
Total costs for exempted flights	**92k€**

Fintraffic ANS has contract with Finnish Airforce to cover the cost of military flights. For other exempted flights there is no financing for the time being.

Costs planned in relation to services to flights exempted from ANS charges (pursuant to Article 31(3) to (5) and Article 22(6) of Implementing Regulation (EU) 2019/317) in the charging zone in 2021.

	2021
Costs for exempted VFR flights	0€
Costs for exempted IFR flights	91€
Total costs for exempted flights	**91k€**

Flights which have been exempted from the payment of navigation charges in Finland:

a) mixed VFR/IFR flights only in the airspace of the Flight Information Regions falling within the competence of the Contracting State or States where they are performed exclusively under VFR and where a charge is not levied for VFR flights;

b) flights performed by aircraft of which the maximum take-off weight authorised is less than two (2) metric tons;

c) flights performed exclusively for the transport, on official mission, of the reigning Monarch and his/her immediate family, Heads of State, Heads of Government, and Government Ministers. In all cases, this must be substantiated by the appropriate status indicator on the flight plan;

d) search and rescue flights authorised by a competent SAR body;

e) military flights of any Contracting State; (Fintraffic ANS/Finavia has separate contract with the Finnish Air Force concerning services and air traffic charges, including en route charges)

f) training flights performed exclusively for the purpose of obtaining a licence, or rating in the case of cockpit flight crew, and where this is substantiated by an appropriate remark on the flight plan. Flights must be performed solely within the airspace of the State concerned. Flights must not serve for the transport of passengers and/or cargo, nor for positioning or ferrying of the aircraft;

g) flights performed exclusively for the purpose of checking or testing equipment used or intended to be used as ground aids to air navigation, excluding positioning flights by the aircraft concerned;

h) flights terminating at the aerodrome from which the aircraft has taken off during which no intermediate landing has been made (circular flights).

Main part of exempted flights in Finland consists of military flights. These flights are financed by the military.

c) Description of adjustments resulting from the traffic risk sharing mechanism in accordance with Article 27;

Not applicable for this submission – will be based on the combined year 2020-2021 after the adoption of the RP3 performance plan as per Article 16 (Exceptional measures for RP3 due to the COVID-19 pandemic (Regulation (EU) 2020/1627, Article 5(1) and (2).

d) Description of the differences between determined costs and actual costs of year n as a result of the changes in costs referred to in Article 28(3) including description of the changes referred to in that Article;

Not applicable for this submission – will be based on the combined year 2020-2021 after the adoption of the RP3 performance plan as per Article 16 (Exceptional measures for RP3 due to the COVID-19 pandemic (Regulation (EU) 2020/1627, Article 5(3).

e) Description of adjustments resulting from unforeseen changes in costs in accordance with Article 28(3) to (6);

Not applicable for this submission – will be based on the combined year 2020-2021 after the adoption of the RP3 performance plan as per Article 16 (Exceptional measures for RP3 due to the COVID-19 pandemic (Regulation (EU) 2020/1627, Article 5(3).

f) Description of the other revenues, if any, broken down between the different categories indicated in Article 25(3);

Revenues from union assistance programs allocated to enroute charging zone (Table 4)

In Table 4 are the projects which have received revenues from CEF/INEA funding. TEN-T funding has not been reported in this table. Value of these projects is 31 M€ and amounts granted 15,5 M€. Amount received until now is 2,5 M€ (amounts returned to INEA are taken into account). This sum does not include EU-funding which will be disbursed in May 2021. Amounts retained in respect of administrative cost includes a share of FPA coordination fee. Amounts reimbursed to users are presented in table below.

Difference between received EU-funding and EU-funding transferred to airlines

	2016	2017	2018	2019	2020	2021	Total
EU-funding received	3 517	-146	0	-882	12	0	2 501
EU funding transferred to airlines		3	458	1 197	502	302	2 462
Difference (1000€)	3 517	-149	-458	-2 079	-490	-302	39

Other 'Other revenues'

Fintraffic ANS receives income from the Finnish Defence forces related to military flights. Reported income relates to those military flights not included in total service units.

The reimbursement to users because of the unspent CAPEX in RP2, total of 1,2 M€ (0,24 M€/year), is reported in the revenues from commercial activities.

Fintraffic ANS received in 2020 state fund in total 2,9 M€ and is expected to receive state fund in 2021 in total 3,4 M€. These are reported in other income and planned to be reimbursed in year n+2 (2022 and 2023).

g) Description of the application of the financial incentive schemes referred to in Article 11(3) and 11(4) in year n and the resulting financial advantages and disadvantages; description and explanation of the modulation of air navigation charges applied in year n under Article 32 where applicable, and resulting adjustments;

Financial incentive schemes

The description and justification of the parameters of the incentive scheme defined in accordance with Article 11(3) and 11 (4) are provided in the body of the performance plan under item 5.2.

Modulation of charges

Not applicable

The actual application and relating financial advantages and disadvantages for 2020 is not applicable (Exceptional measures for RP3 due to the COVID-19 pandemic (Regulation (EU) 2020/1627, Article 3 (3)).

h) Description of adjustments relating to the temporary application of a unit rate under Article 29(5);

Not applicable for this submission – will be based on the combined year 2020-2021 after the adoption of the RP3 performance plan as per Article 16 (Exceptional measures for RP3 due to the COVID-19 pandemic (Regulation (EU) 2020/1627, Article 5(4).

i) Description of the cross-financing between en route charging zones, or between terminal charging zones, in accordance with point (e) of Article 15(2) of Regulation 550/2004;

No cross-financing applied.

j) Information on the application of a lower unit rate under Article 29(6) than the unit rate calculated in accordance with Article 25(2) and the means to finance the difference in revenue;

NSA has not been informed of intention of the application of a lower unit rate under Article 29(6).

k) Information and breakdown of the adjustments relating to previous reference periods impacting the unit rate calculation;

Traffic risk sharing up to 2017 (7488 M€): Under recoveries are allocated to years 2020 and 2021.

Cost exempt from cost sharing up to 2017 and 2018-2019 (1533 M€) are planned to be allocated to year 2022.

Other carry-overs and adjustments are allocated as defined in the SES legislation. This also applies to 2019 traffic risk and inflation reimbursements which are allocated to year 2021.

ADDITIONAL INFORMATION TO REPORTING TABLE 3 – COMPLEMENTARY INFORMATION ON COMMON PROJECTS AND ON UNION ASSISTANCE PROGRAMME

I) Information on the costs of common projects and other funded projects broken down per individual project, as well as of public funds obtained from public authorities for these projects.

Fintraffic ANS has been granted CEF co-funding ca. 15,5 M€ during the years 2016-2019. That is maximum 50% of the budgeted total costs (i.e. 31,1 M€). Until now the co-fundings received are ca. 3,5 M€ but 1 M€ of that was to reimbursed for SESAR Deployment Manager (acting as Grant Agreement Coordinator) due to delayed projects and their delayed costs – so the received amount of co-funding until now totals ca. 2,5M€.

Fintraffic ANS has compensated the received co-funding towards the airlines by lowering its unit rates. In 2017 the compensation was 3 k€, in 2018 458k€ and in 2019 1197k€ totalling 1659 k€. In 2020 compensation was 107 k€ for OPEX co-fundings and 395k€ for CAPEX co-funding. In 2021 Compensation is 302k€.

The schedule for further compensations will be dependent on exact date of finalization of the supported actions. The principle is that compensation for OPEX co-fundings will be made two years after received co-funding and compensation for CAPEX co-fundings will be made according to depreciation period after taking the systems in use.

Difference between received EU-funding and EU-funding transferred to airlines

	2016	2017	2018	2019	2020	2021	Total
EU-funding received	3 517	-146	0	-882	12	0	2 501
EU funding transferred to airlines		3	458	1 197	502	302	2 462
Difference (1000€)	3 517	-149	-458	-2 079	-490	-302	39

Ongoing pilot common projects and foreseen costs in RP3:

Pilot common projects Family AF3:
- CEF 2014: 020AF3 - Borealis Free Route Airspace (Part 1)
  - to be finished by 2020
  - personnel and travel costs
  - no other public funding
- CEF 2015: 2015_227_AF3_A - Borealis FRA Implementation (Part 2)
  - to be finished by 2021
  - personnel and travel costs
  - investments and systems installation costs – depreciation costs for RP3
  - no other public funding
- estimated costs for AF3 Free Route airspace components implementation during RP3
  - personnel and travel costs
  - investments and systems installation costs
  - no other public funding

Pilot common projects Family AF5:
- CEF2015: 015_174_AF5_A - NewPENS Stakeholders contribution for the procurement and deployment of NewPENS
  - to be finished by 2020
  - personnel and travel costs
  - investments and systems installation costs - depreciation costs for RP3

  - no other public funding
- CEF2016: 2016_141_AF5 - Deploy SWIM Governance
  - to be finished by 2020
  - personnel and travel costs
  - no other public funding
- CEF2016: 2016_027_AF5 - European Deployment Roadmap for Flight Object Interoperability
  - to be finished by 2020
  - personnel and travel costs
  - no other public funding
- CEF2017: 2017_084_AF5 - SWIM Common PKI and policies & procedures for establishing a Trust framework
  - to be finished by 2020
  - personnel and travel costs
  - no other public funding
- estimated costs for AF5 SWIM Yellow profile and SWIM blue profile implementation during RP3
  - personnel and travel costs
  - investments and systems installation costs
  - no other public funding

Pilot common projects Family AF6:
- CEF2016: 2016_159_AF6 - DLS Implementation Project - Path 2
  - to be finished by 2020
  - personnel and travel costs
  - no other public funding
- estimated costs for AF6 DLS implementation during RP3
  - personnel and travel costs
  - investments and systems installation costs
  - no other public funding