

EARTO Technical Paper

on the Calculation of Personnel Costs in Horizon Europe

16 July 2020

EARTO members very much appreciate the efforts of the EU institutions to preserve continuity in the Framework Programmes' (FPs) rules for participation and Model Grant Agreement (MGA) provisions, while further improving simplification and efficiency. Following the European Commission (EC) proposal to move from hourly rates to daily rates for the calculation of personnel costs in Horizon Europe, EARTO has been closely following the development of the MGA provision on this topic¹.

As EARTO stressed in previous papers¹, the daily rate approach is not a simplification for most FP beneficiaries and would not be in line with their usual cost accounting practices. Converting hours into days would rather increase the administrative burden for both beneficiaries and auditors (e.g. additional conversion of hours into days including for part time workers, crosschecking calendar years and reporting periods), and thereby increase the risk of errors. In addition, it would only have limited effects to improve cross-reliance on audits for FP beneficiaries since most national and regional RD&I funding programmes are and will continue to be based on hours for personnel costs' reporting.

However, if adopting a unified corporate approach for the MGA requires moving to daily rates for personnel costs in Horizon Europe, EARTO hereby recalls its main recommendations:

- **As stated in the Common Understanding on the Horizon Europe Regulation², the calculation of personnel costs and in particular the "day-equivalent" methodologies to convert hours into days should aim to deviate as little as possible from beneficiaries' usual cost accounting practices.** To do so, different options to calculate days-equivalents should be offered to beneficiaries and clearly mentioned in the MGA, in continuity with H2020 rules. Beneficiaries should be able to choose their preferred option.
- **As many beneficiaries will keep relying on timesheets based on hours as reliable time-recording system, the conversion of hours into days should strictly be limited to the time of reporting.** This would help to limit as much as possible the extra administrative burden that this conversion will automatically generate.
- **The option of using average personnel costs via unit costs, which is in accordance with the usual cost accounting practices of beneficiaries, needs to be maintained in Horizon Europe.**

To move towards practical implementation, EARTO financial experts hereby present their personnel costs' calculations based on their understanding of the EC daily rate and day-equivalent methodology³. This paper aims to explain how the remaining open questions regarding the hours-to-days conversion methodology would be best answered according to beneficiaries' usual cost accounting practices.

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¹ See [EARTO Analysis](#) of the draft Horizon Europe MGA: Financial provision, 21 February 2020
[EARTO Input](#) towards HE MGA: Ensure continuity with H2020 personnel costs' options, 2 December 2019
[Petition on Horizon Europe Personnel Costs](#), signed by many EARTO members (amongst many others), April 2020
² [Common understanding on Horizon Europe's Regulation](#) - Recital 47: "In accordance with the Financial Regulation, the Programmes should provide the basis for a wider acceptance of the usual cost accounting practices of the beneficiaries as regards to personnel costs [...]"
³ As laid down in the [EC non-paper on personnel costs daily rates in HE](#) from June 2020

1. Calculating personnel costs in Horizon Europe

The European Commission's formula to calculate personnel costs in Horizon Europe, as stated in the new corporate Model Grant Agreement, is as follows:



Source: EC Presentation "HE Model Grant Agreement Novelities" - June 2020

The EC also points out that this calculation will be performed by calendar year, and not anymore by taking into account the last closed financial year. **In addition, "annual personnel costs for the person" should either be:**

- **an average standard tariff for a 100% FTE employee based on actual costs at the level of the organisation** in accordance with the beneficiary's usual cost accounting practices,
- **or the actual personnel costs for the employee**, in which case the payment of extra payslips (13th and 14th months) needs to be equally broken down on a monthly basis and included in the personnel costs' calculation.

Based on this formula, we would calculate the personnel costs for a person 100% Full Time Equivalent (FTE) as shown in Table 1.

Example for Staff group A - 100% FTE	
<i>Reporting Period: 03/2021 - 12/2021</i>	
Basis per calendar year	01-12/2021
Annual personnel costs for the person (APC)	90.000,00€
Daily rate denominator (D)	215 days
Project hours during the reporting period (Ph)	400 hours
Daily rate ($Dr = APC/D$)	<i>90.000,00€ / 215 days =</i> 418,60€/day
Day-equivalent (De) calculated with one of the 3 options (see sections 3 below)	7,8 hours/day
Project days worked ($Dw = Ph / De$)	<i>400 hours / 7,8h per day =</i> 51,28 days
Rounded (half day)	51,5 days
Project Personnel costs ($PPC = Dr * Dw$)	<i>418,60€ per day * 51,5 days =</i> 21.557,90€

Table 1

Examples and calculations on how the daily rate denominator need to be adapted in different circumstances are detailed in part 2. The calculation of the day-equivalent under the 3 different options presented by the EC is worked out in part 3 for 100% FTE, and in part 4 for part-time employees and when there is a change of contract (i.e. FTE rate) during the reporting period.

2. Calculating the denominator for the daily rate

In general, a fixed number of 215 days per year to be used as denominator for the calculation of the daily rate for a full calendar year in Horizon Europe will create imbalances between countries and organisations. The number of working days per year, calculated to take account holidays (contractual holidays, national public holidays, organisations' holidays), differs quite considerably between countries and organisations, depending for instance on the employment contracts and the general collective agreements.

"The combined total of agreed annual leave and public holidays varies greatly across the EU. In 2018, it ranged from 28 days in the UK and 29 in Belgium, Estonia and Ireland, to 39 days in Denmark and Germany and 41 days in Slovakia. This means the difference between the smallest and largest figures is equivalent to nearly three working weeks. Two other countries with notably high levels of leave in 2018 were Austria and Malta, with 38 days each."

Source: Eurofound report - Working time in 2017-2018

In any case, such denominator for the calculation of the daily rate will need to be adapted to take into account specific circumstances, such as the situation when a reporting period ends before the end of the year, but also for employees taking a parental leave, or for employees leaving or joining the organisation in the middle of a reporting period. This would benefit from an ex-ante assessment (e.g. CoMUC) providing legal certainty to the beneficiaries.

a. Calculating the denominator for daily rates per reporting periods

Based on the EC formula, personnel costs will need to be calculated based on the current calendar year. In such case, we would calculate the daily rate denominator in view of financial statements for reporting periods as shown in table 2. However, it is important to note that:

- when a reporting period starts after the beginning of the year, calculating personnel costs based on the full calendar year as it is intended in the EC non paper and as calculated in table 2 could create issues during audits, since according to beneficiaries usual cost accounting practices salaries are paid on a monthly basis (incl. salary raises during the year, 13th and 14th payslips, etc.).
- when a reporting period ends before the end of the year, the daily rate denominator will necessarily need to be adapted to be able to take into account actual personnel costs (see table 2).

In addition, this would result in a mixed system with previous years' calculations based on annual salaries and current years based on monthly salaries, which will require adjustments to previous cost statements (as in FP7).

	Basis per calendar year	Daily rate denominator <i>215 days / 12 months * months in basis per calendar year</i>
Example 1: 03/2021 - 02/2024		
Reporting period 1: 03/2021 - 08/2022	in 2021: 01-12/2021	215 days
	in 2022: 01-08/2022 (8 months)	$215/12 * 8 = 143,3$ days
Reporting period 2: 09/2022 - 02/2024	in 2022: 01-12/2022	215 days
	in 2023: 01-12/2023	215 days
	in 2024: 01-02/2024 (2 months)	$215/12 * 2 = 35,8$ days
Example 2: 03/2021 - 02/2023 & 6 months extension until 08/2023		
Reporting period 1: 03/2021 - 02/2022	in 2021: 01-12/2021	215 days
	in 2022: 01-02/2022 (2 months)	$215/12 * 2 = 35,8$ days
Reporting period 2: 03/2022 - 02/2023	in 2022: 01-12/2022	215 days
	in 2023: 01-02/2023 (2 months)	$215/12 * 2 = 35,8$ days
6 months extension: 03/2023 - 08/2023	in 2023: 01-08/2023	$215/12 * 8 = 143,3$ days

Table 2

b. Calculating the denominator for daily rates for employees entering or leaving the organisation during the year

We would calculate the daily rate denominator in case of staff changes during the reporting period as shown in table 3. **It is also important to note that staff could also start or leave mid-month, in which case the % employment of the year would need to be calculated on a daily or hourly basis for the running month(s).**

<i>Reporting period:</i> 01/2021-12/2021	Basis per calendar year	% employment of the year	Daily rate denominator <i>% of employment of the year re-calculated to days</i>
Example 1: Staff group A starts on 01/03/2021			
For Staff group A	03-12/2021 (10 months)	$10/12 = 83,3\%$	$83,3\% * 215 = 179,1$ days
Full year Staff	01-12/2021	100%	215 days
Example 2: Staff group B leaves on 31/05/2021			
For Staff group B	01-05/2021 (5 months)	$5/12 = 41,7\%$	$41,7\% * 215 = 89,6$ days
Full year Staff	01-12/2021	100%	215 days

Table 3

c. Calculating the denominator for daily rates for employees in case of parental leave

We would calculate the daily rate denominator in case of parental leaves during the reporting period as shown in table 4. **It is also important to note that staff could also leave and/or come back mid-month, in which case the % employment of the year would need to be calculated on a daily or hourly basis for the running month(s).**

<i>Reporting period:</i> 03/2021-12/2021	Basis per calendar year	% employment of the year	Daily rate denominator <i>% of employment of the year re-calculated to days</i>
Example: Staff group A takes a 6 months parental leave from 01/05/2021 to 31/10/2021			
For Staff group A	01-12/2021	$6/12 = 50\%$	$50\% * 215 = 107,5$ days

Table 4

3. Converting hours into day equivalents under the 3 options for full time employees

a. Option 1 - Converting hours into day-equivalents "based on the average number of hours that the person must work per working day according to her/his contract"

Under this option, we would calculate the day-equivalent for an employee working 100% FTE over 5 days a week ("staff group A") as shown in table 5. In addition, we also understand that the number of hours that a person must work per working day according to her/his contract can include both contractual and paid overtimes, which can both be considered in the amount of working hours/week.

Option 1 - Conversion based on the number of hours that the person must work per working day according to his/her contract in the specific period of the calendar year	
➤ Example of Personnel costs calculation for staff group A (100% FTE)	
Reporting Period	03-12/2021
Basis per calendar year	01-12/2021
Full Time Equivalent (FTE)	100%
Contract hours per week	38,5h/week
Day-equivalent	38,5 hours /5 days = 7,7h/day

Table 5

b. Option 2 - Converting hours into day-equivalents “based on the usual standard annual productive hours of the beneficiary, if it is at least 90% of the workable time”

The standard annual productive hours can be calculated as the average annual productive hours of all employees of the beneficiary, based on the time recording system of the beneficiary and according to its usual cost accounting practices. In accordance with beneficiaries’ usual cost accounting practices, these average productive hours already take into account absences (incl. sickness, holidays, bank holidays, etc.), as well as non-project related work.

Example: The standard annual workable time could be calculated as follows:	
➤ Total days / year	+365
➤ Saturdays & Sundays	-104
➤ Public holidays (Mo-Fr)	- 8
➤ Company paid holiday (closing days)	- 2
➤ Annual paid holidays	-25
TOTAL	226 days x 7,7 hours/day⁴ = 1.740 hours/year

Under the EC rules for Horizon Europe, if the standard annual productive hours are lower than 90% of the workable time of a 100% FTE, the standard annual productive hours are capped by this 90%.

Under this option, we would calculate the day-equivalent for an employee working 100% FTE over 5 days a week (“staff group A”) as shown in table 6. **Ideally, if beneficiaries can demonstrate that their standard annual productive hours and their workable hours have and will remain stable through the years, they could set a fixed conversion rate for the whole Horizon Europe programme, instead of redefining it every year.**

Option 2 - Conversion based on the usual standard annual productive hours of the beneficiary, if it is at least 90% of the workable time	
➤ Example of Personnel costs calculation for staff group A (100% FTE)	
<i>Reporting Period: 03/2021 - 12/2021</i>	
Reporting Period	03-12/2021
Basis per calendar year	01-12/2021
Full Time Equivalent (FTE)	100%
Standard annual productive hours	1.540 hours per year
Standard annual workable hours	1.740 hours per year
Standard annual productive hours capped by the 90% of the standard annual workable hours	1.740 * 90% = 1.566 > 1.540 1.566 hours per year
Day-equivalent	1.566 hours /215 days = 7,28h/day

Table 6

c. Option 3 - Converting hours into day-equivalents “based on a fixed number of hours”

Under this option, and for an employee working 100% FTE over 5 days a week (“staff group A”), 1 day-equivalent = 8 hours (see table 7).

Option 3 - Conversion based on a fixed number of hours: 1 day-equivalent = 8 hours	
➤ Example of Personnel costs calculation for staff group A (100% FTE)	
Reporting Period	03-12/2021
Basis per calendar year	01-12/2021
Full Time Equivalent (FTE)	100%
Day-equivalent	8h/day

Table 7

⁴ based on working contract or collective agreement

4. Converting hours into day-equivalents under the 3 options when an employee (incl. part-time) has a change of contract during a reporting period

Converting the working time of part-time workers into day-equivalent under the three different options detailed above require specific attention. In addition, a change of contract during a reporting period (e.g. from 100% FTE to 50% FTE, parental leave, etc.), which will also lead to a change of the daily rate denominator, also requires some specific calculations. This could become an error intensive area in Horizon Europe. The calculation of the day-equivalent under the 3 options for these specific but usual situations are laid down below.

- **Methodologies to calculate the daily rates for employees working part-time:**

Depending on the contract, an employee working less than 100% Full Time Equivalent (FTE) can have his weekly hours distributed over less than 5 working days.

With this in mind, if an employee's contract is less than 100% FTE, the most efficient way to calculate the day-equivalent based on beneficiaries' usual cost accounting practices is to calculate it as a % of the day-equivalent for 100% FTE, as shown in table 8 (Method 1). Such calculation method only requires knowing the part time %FTE. The number of working days per week is not relevant. This also means that the denominator for the daily rate will not need to be recalculated and will remain the same as for the 100% FTE.

The method presented in the EC non-paper to calculate the day-equivalent for employees working less than 100% FTE is shown in table 8 (Method 2). Such method requires to take into account the weekly hours of an employee and the number of working days per week. In such case, when the employee works less than 5 days per week, the denominator for the daily rate would need to be recalculated. This method would require further calculations, thereby generating a higher administrative burden for beneficiaries. It would in addition increase the risk of errors.

	Daily rate denominator	Day-equivalent
FTE 100% - 38,5h/week	215 days	7,7 hours per day
Method 1 to calculate the daily rate for part-time workers - based on the daily rate for 100%FTE => preferred method, based on usual cost accounting practices, does not require recalculation of the daily rate denominator		
<i>Calculations</i>	<i>Same denominator as for 100% FTE</i>	<i>daily rate for 100% FTE * % part time FTE</i>
FTE 50% distributed in 5 working days	215 days	$7,7h/day * 50\% = \mathbf{3,85 \text{ hours/day}}$
FTE 50% distributed in 3 working days	215 days	$7,7h/day * 50\% = \mathbf{3,85 \text{ hours/day}}$
Method 2 to calculate the daily rate for part-time workers (presented in EC non-paper) - based on the weekly hours and number of working days a week => not preferred as it requires knowledge of the number of working days per week and requires recalculation of the daily rate denominator if less than 5 working days per week		
<i>Calculations</i>	$\frac{215 \text{ days per year}}{5 \text{ working week days}} * \text{number of days worked}$	$\frac{\text{Working hours per week}}{\text{number of working days}}$
FTE 50% - 19,25h/week distributed in 5 working days	$\frac{215}{5} * 5 = \mathbf{215 \text{ days}}$	$\frac{19,25}{5} = \mathbf{3,85 \text{ hours/day}}$
FTE 50% - 19,25h/week distributed in 3 working days	$\frac{215}{5} * 3 = \mathbf{129 \text{ days}}$	$\frac{19,25}{3} = \mathbf{6,4 \text{ hours/day}}$

Table 8

The tables 9 to 11 below show how we would convert the reporting hours recorded for the action into "day equivalents" for part-time workers and when there is a change of work contract during a reporting period under each of the 3 options mentioned in part 3. The calculation methodology is actually the same for each of the 3 options (based on the method 1 presented in table 8).

a. Option 1 - Converting hours into day-equivalents "based on the average number of hours that the person must work per working day according to her/his contract"

Under this option, for an employee ("staff group B") which has a change in his working contract (i.e FTE rate) during the reporting period, we would calculate the day-equivalent as shown in table 9.

Option 1 - Conversion based on the number of hours that the person must work per working day according to his/her contract in the specific period of the calendar year		
➤ Example of Personnel costs calculation for staff group B (mixed FTE)		
Reporting period	01-09/2022 (9 months)	
Daily rate denominator	<i>215 days / 12 months * 9 months = 161,25 days</i>	
Basis per calendar year	01-02/2022 (2 months)	03-09/2022 (7 months)
Full Time Equivalent (FTE)	100% FTE	50% FTE
Contract hours per week	38,5h/week	19,25h/week
Day-equivalent	<i>38,5 hours / 5 days = 7,7h/day</i>	<i>100% FTE = 7,7h/day 7,7h/day * 50% = 3,85h/day</i>
Average FTE for the reporting period	<i>(100% * 2months + 50% * 7 months) / 9 months = 61,11%</i>	
Average day-equivalent for the reporting period	<i>100% FTE = 7,7h/day 7,7h/day * 61,11% = 4,71h/day</i>	

Table 9

b. Option 2 - Converting hours into day-equivalents "based on the usual standard annual productive hours of the beneficiary, if it is at least 90% of the workable time"

As detailed under point 2.b, the standard annual productive hours can be calculated as the average annual productive hours of all employees of the beneficiary, based on the time recording system of the beneficiary and according to the beneficiaries usual cost accounting practices. Part-time employees are included in such standard annual productive hours, corrected as 100% FTE. Under this option, for an employee ("staff group B") which has a change in his working contract (i.e. FTE rate) during the reporting period, we would calculate the day-equivalent as shown in table 10.

Option 2 - Conversion based on the usual standard annual productive hours of the beneficiary, if it is at least 90% of the workable time		
➤ Example of Personnel costs calculation for staff group B (mixed FTE)		
Reporting period	01-09/2022 (9 months)	
Daily rate denominator	<i>215 days / 12 months * 9 months = 161,25 days</i>	
Basis per calendar year	01-02/2022 (2 months)	03-09/2022 (7 months)
Full Time Equivalent (FTE)	100% FTE	50% FTE
Standard annual productive hours (incl. 90% capping)	1.566 hours per year	
Day-equivalent	<i>1.566 hours / 215 days = 7,28h/day</i>	<i>100% FTE = 7,28h/day 7,28h/day * 50% = 3,64h/day</i>
Average FTE for the reporting period	<i>(100% * 2months + 50% * 7 months) / 9 months = 61,11%</i>	
Average day-equivalent for the reporting period	<i>100% FTE = 7,28h/day 7,28h * 61,11% = 4,45h/day</i>	

Table 10

c. Option 3 - Converting hours into day-equivalents "based on a fixed number of hours"

Under this option, for an employee ("staff group B") which has a change in his working contract (i.e. FTE rate) during the reporting period, we would calculate the day-equivalent as shown in table 11.

Option 3 - Conversion based on a fixed number of hours: 1 day-equivalent = 8 hours		
➤ Example of Personnel costs calculation for staff group B (mixed FTE)		
Reporting period	01-09/2022 (9 months)	
Daily rate denominator	<i>215 days / 12 months * 9 months = 161,25 days</i>	
Basis per calendar year	01-02/2022 (2 months)	03-09/2022 (7 months)
Full Time Equivalent (FTE)	100% FTE	50% FTE
Day-equivalent	8h/day	<i>100% FTE = 8h/day 8 hours * 50% = 4h/day</i>
Average FTE for the reporting period	<i>(100% * 2months + 50% * 7 months) / 9 months = 61,11%</i>	
Average day-equivalent for the reporting period	<i>100% FTE = 8h/day 8 hours * 61,11% = 4,89h/day</i>	

Table 11

EARTO and its financial experts would very much welcome an open discussion with the EC services on these technical calculations and are ready to support the EC in their drafting of the Annotated Grant Agreement provision on this topic. In addition, other points should also be clarified by the EC before the start of Horizon Europe, including for instance the audit process (incl. for monthly declarations), the compatibility of such approach with unit costs options, with internal invoicing and with the reporting of work progress, etc.

For more information on EARTO's recent position papers towards Horizon Europe's Model Grant Agreement (financial provisions):

- [EARTO Paper](#) on Horizon Europe's Internal Invoices Scheme – 26 February 2020
- [EARTO Analysis](#) of the draft Horizon Europe MGA: Financial provisions – 21 February 2020
- [EARTO Input](#) towards HE MGA: Ensure continuity with H2020 personnel costs' options – 2 December 2019
- [EARTO Answer](#) to EC Consultation on Horizon Europe Implementation -23 September 2019
- [EARTO Recommendations](#) on Horizon Europe's Implementation: Financial Aspects -30 April 2019

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