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**Meeting of the Working Group
on Article 83 of the Staff Regulations**

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Pension Scheme of European Officials (PSEO)

Defined Benefit Obligation (DBO) at 31.12.2016

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Item 4 of the agenda

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1. Introduction

The European Communities operate a defined benefit pension plan. A defined benefit plan is a pension plan that generally defines an amount of pension benefit that an employee will receive on retirement, usually dependent on one or more factors such as age, years of service and remuneration. Staff contribute one third of the expected cost of these benefits from their salaries, this expected cost being determined under a set of specific rules and assumptions which are defined in the Staff Regulations of Officials of the European Communities.

While Article 83 of the Staff Regulations specifies that *"benefits paid under this pension scheme shall be charged to the budget of the Communities. Member States shall jointly guarantee payment of such benefits in accordance with the scale laid down for financing such expenditure"*, the liability is not funded. Article 83 also states that *"Officials shall contribute one third of the cost of financing this pension scheme"*

The liability recognised in the Budget of the Communities is called the "Defined Benefit Obligation" (DBO) at the assessment date, less the fair value of any plan assets. This DBO is determined by discounting the estimated future cash outflows attributed to past services using a discount rate based on interest rates of government bonds that are denominated in the currency in which the benefits will be paid, and that have terms to maturity approximating to the terms of the related pension liability.

The rules concerning the PSEO (Pension Scheme of European Officials) are defined by the version of the Staff Regulations of Officials of the European Communities in force from 1 January 2014. The arrangements cover the various types of pensions and allowances (retirement, invalidity, survival). The rules regarding the staff pensions are directly applicable in all Member States.

Eurostat was requested by DG BUDG to calculate the DBO of the pension scheme for inclusion in the Annual Accounts of the European Communities.

The DBO of the PSEO was evaluated on the basis of the member population at 31 December 2016 and the applicable rules in the Staff Regulations in force from the 01.01.2014. This valuation covered the benefits connected with seniority, invalidity and survival (different types of pensions as well as invalidity allowance), benefits related to family allowances, death before retirement and the effect of country correction coefficients applied to pensions paid, as provided for in the Staff Regulations.

The valuation was carried out in accordance with the IPSAS 25 methodology. This accounting standard requires the employer to determine his actuarial commitment on an ongoing basis, taking into account both the promised benefits during the active lifetime of employees, and foreseeable increases in salaries.

The actuarial valuation method used to calculate this DBO is known as the projected unit credit method.

2. PSEO Population

2.1. Reference Population

The reference population covers active officials and beneficiaries who are members of the Pension Scheme of European Officials (PSEO), and who are working or worked in EU Institutions and Agencies or are survivor of dead officials or pensioners.

The PSEO members can be split into two main groups: contributing and non-contributing members:

- Contributing members are officials in “active employment”, officials in one of the other administrative statuses detailed in article 35 of the Staff Regulations, invalids receiving an invalidity allowance and beneficiaries of an allowance for termination of service;
- Non-contributing members are the beneficiaries of a retirement, invalidity or survivor's pension and deferred pensioners.

PSEO benefits concern the following members (at 31.12.2016):

- Staff in active employment in all the institutions and agencies included in the PSEO;
- Staff in a deferred situation, i.e. who have temporarily or definitively left the Institutions but have left their pension rights in the PSEO;
- Former staff benefiting from a retirement pension;
- Former staff benefiting from an invalidity pension;
- Former staff benefiting from an invalidity allowance;
- The recipients of a survivor's pension (widows and widowers, orphans, dependants).

Table I presents the list of the Institutions, agencies and services at 31.12.2016, whose staff is covered by the PSEO.

Table I. Institutions and Agencies members of the PSEO

Institutions (art. 1a.1 of the SR)
Parlement européen
Conseil de l'Union européenne
Commission européenne
Cour de justice de l'Union européenne
Cour de comptes européenne
Bodies (art. 1b of the SR)
Le service européen pour l'action extérieure (SEAE)
Comité économique et social européen
Comité des régions
Médiateur de l'Union européenne
Contrôleur européen de la protection des données
Agences (art. 1a.2 of the SR)
Centre européen pour le développement de la formation professionnelle
Fondation européenne pour l'amélioration des conditions de vie et de travail
Agence européenne pour l'environnement
Fondation européenne pour la formation
Observatoire européen des drogues et des toxicomanies
Agence européenne pour l'évaluation des médicaments
European Union Intellectual Property Office
Agence européenne pour la santé et la sécurité au travail
Office communautaire des variétés végétales
Centre de traduction des organes de l'Union
Autorité européenne de sécurité des aliments
Organe européen pour le renforcement de la coopération judiciaire
Agence européenne pour la sécurité maritime
Agence européenne pour la sécurité aérienne
Agence européenne chargée de la sécurité des réseaux et de l'information
Centre européen de prévention et de contrôle des maladies
Agence ferroviaire européenne
Agence du GNSS européen
Agence européenne pour la gestion de la coopération opérationnelle aux frontières extérieures des États membres de l'Union européenne
Agence communautaire de contrôle des pêches
Collège européen de police
Agence européenne des produits chimiques
Institut européen pour l'égalité entre les hommes et les femmes
Agence des droits fondamentaux de l'Union européenne
Institut européen d'innovation et de technologie
Office européen de police
Agence de coopération des régulateurs de l'énergie
Office de l'Organe des régulateurs européens des communications électroniques
Bureau européen d'appui en matière d'asile
Autorité bancaire européenne
Autorité européenne des assurances et des pensions professionnelles
Autorité européenne de surveillance -Autorité européenne des marchés financiers-
Agence européenne pour la gestion opérationnelle des systèmes d'information à grande échelle au sein de l'espace de liberté, de sécurité et de justice
Single Resolution Board
Other bodies
Entreprise commune européenne pour ITER et le développement de l'énergie de fusion
Entreprise commune "Clean Sky 2"
Entreprise commune pour la mise en œuvre de l'initiative technologique conjointe en matière de médicaments innovants
Entreprise commune pour la mise en œuvre d'une initiative technologique conjointe sur les systèmes informatiques embarqués
Entreprise commune pour les piles à combustible et l'hydrogène
Entreprise commune pour la réalisation du système européen de nouvelle génération pour la gestion du trafic aérien
Entreprise commune Shift2Rail
Entreprise commune Bio-based Industries
Executive agencies (Council Reg (CE) n° 58/2003 of 19 Dec 2002)
Agence exécutive pour la santé et les consommateurs
Agence exécutive « Education, audiovisuelle et culture » (siège à Bruxelles)
Agence exécutive du Conseil européen de la recherche (siège à Bruxelles)
Agence exécutive pour la recherche (siège à Bruxelles)
Agence exécutive pour les petites et moyennes entreprises
Agence exécutive du réseau transeuropéen du transport

Table II tells us that the DBO calculation included a total of 84 536 individuals split into:

- 61 048 active members,
- 15 645 beneficiaries of a retirement pension,
- 452 members who are entitled to the benefit of their retirement pension deferred at the normal retirement age,
- 3 476 beneficiaries of a disability pension,
- 3 915 beneficiaries of a survivor's pension (widows and orphans).

The population of members of the PSEO increased by 1 307 individuals compared to the previous year.

Table II. Evolution of the PSEO members

PSEO members	2016	2015	Change
Actives	61 048	60 008	1 040
Retirees	15 645	15 203	442
Deferred Retirees	452	457	- 5
Disabled staff	3 476	3 602	- 126
Survivors	3 915	3 959	- 44
Total members	84 536	83 229	1 307

3. Actuarial Assumptions

3.1. Variables used in the DBO calculation

The variables used for the PSEO DBO calculation are updated in compliance with the public sector accounting standard IPSAS 25 "Employee Benefits", with the applicable best actuarial practices and in compliance with the relevant legal basis represented by the Staff Regulations of Officials and Conditions of Employment of Other Servants of the European Union.

Two kinds of variables are used:

- parameters,
- actuarial assumptions.

Parameters are values mainly linked to the application of the Staff Regulations. They change according to certain conditions related to the individual situation of each official (e.g. the annual accrual rate is 2% for staff recruited before 1 May 2004, 1.9% for staff recruited between 1 May 2004 and 31 December 2013, 1.8% for staff recruited after 1 January 2014). The main parameters involved in the present calculation are shown in Table III.

Table III. Summary of main parameters

Parameter	Value
Legal source	Staff Regulations in force from 01.01.2014
Reference date for the population (Annex XII Article 1)	31.12.2016
Maximum Retirement Age (Staff Regulations Article 52)	65 (automatically officials in service before 01.01.2014), 66 (automatically new officials) or 67 (at the staff request) or until 70 (exceptionally)
Normal Retirement Age (Staff Regulations Article 52 and Annex XIII Article 22)	60 to 66 depending on years' service, age and entry date in service
Minimum Retirement Age (Staff Regulations Article 52(b), Annex VIII Article 9 and Annex XIII Article 23)	55 to 58 (officials in service before 01.01.2014), 58 (new officials)
Category and grade for the minimum subsistence figure (Annex VIII Article 6)	first step of grade 1
Maximum Retirement Pension (Staff Regulations Article 77)	70% of the basic salary at the retirement date
Annual Accrual Rate (Article 77 of the Staff Regulations and Article 21 of Annex XIII)	1.8% (officials in service from 1.01.2014) 1.9% (officials in service from 1.05.2004), or 2% (officials in service before 01.05.2004)
Bonus for officials in service after the normal retirement age (Annex VIII Article 5 and Annex XIII Article 22)	1.5% (new officials) or 2.5% of the BS, or 5% of the amount of the pension rights acquired at 60, depending on the entry date in service, the years of service at 1st May 2004 and the age on 1st May 2004 of the official
Penalty for Early Retirement (Annex VIII, Article 9 and Annex XIII, Article 22, point 3)	3.5% (new officials) or 1.75% (former officials) of the pension, for every year before the normal retirement age
Minimum Retirement Pension (Staff Regulations Article 77)	4% of the minimum subsistence figure per year of service
Invalidity Allowance (Staff Regulations Article 78)	70% of the basic salary
Minimum Invalidity Allowance (Staff Regulations Article 78)	100% of the minimum subsistence figure
Reversion Pension (Staff Regulations Article 79 and Annex VIII Article 18)	60% of the retirement pension
Minimum Reversionary Pension (Staff Regulations Article 79 and Annex VIII Article 18)	35% of the last basic salary
Survivor's Pension (Staff Regulations Article 79 and Annex VIII Article 17)	60% of the retirement pension that would have been payable to the official
Minimum Survivor's Pension (Staff Regulations Article 79)	35% of the last basic salary or minimum subsistence figure

Actuarial assumptions are values that need to be estimated in compliance with the relevant legal basis and best applicable actuarial practices. Examples of actuarial assumptions, usually split into financial and demographic ones, are the Real Discount Rate (RDR), the General Salary Growth (GSG), the Individual Salary Progression (ISP), the life tables, the probability of being married at the retirement date, the coefficients for orphans and divorced spouses (aiming at taking into account the orphans and divorced spouses impact on the survivor's pension), etc.

Table IV. Summary of the main actuarial assumptions

Actuarial assumption	Value
Average age difference between married men and women	2 years
Probability of being married for men	81%
Probability of being married for women	49%
Marital status	status at evaluation date
Coefficient for orphan's and divorced spouse's pension	13%
Annex VIII coefficient (correction coefficient)	2.4%
Assumed retirement age	63 (officials in service before 01.05.2004), 64 (officials in service from 1.05.2004) or 66 (officials in service from 1.01.2014)
Duration	21
Nominal Discount rate (NDR)	1.7%
Expected inflation rate over the duration of the scheme	1.4%
Real Discount rate (RDR)	0.3%
General salary growth (GSG)	-0.1%
General pension revaluation (GPR)	-0.1%
Individual salary progression (ISP)	2014 ISP Table
Mortality table	ICSLT2013

3.2. Nominal Discount Rate (NDR)

The NDR is determined as the value of the Euro zero-coupon yield with a maturity of 21 years as at 31.12.2016, 21 years being the duration of the scheme. The estimated NDR as at 31.12.2016 was 1.7%.

3.3. Inflation Rate (IR)

The Inflation Rate employed for the present calculations, is the expected inflation rate over the duration of the scheme (21y): it is determined prospectively and based on prospective values as expressed by index-linked bonds on the European financial markets (break-even inflation). The obtained IR was 1.4%.

3.4. Real Discount Rate (RDR)

The Real Discount Rate (RDR) is computed as difference between the nominal discount rate (NDR) and the expected long-term inflation rate (IR). RDR has been estimated at 0.3%.

3.5. General Salary Growth (GSG)

The GSG used in the framework of liability calculations is set to -0.1% (same value as in the preceding valuation). That value represents the 21-years moving average, of the net salary increases experienced by staff members in the period 1996-2016. The length of the moving average is in line with the estimated duration of the PSEO liability.

3.6. Individual Salary Progression (ISP)

The Individual Salary Progression (ISP) refers to the salary increase due to the career of the EU officials, i.e. promotions and seniority steps.

The same ISP rates as in the preceding valuation have been used in the absence of a modified legal or factual framework.

3.7. Life table

In early 2013 Eurostat and the ISRP (International Service for Remunerations and Pensions) launched a common project in order to produce an updated life table in 2013.

The new Life Table is the final outcome of a process of collection of data coming from several international organisations whose populations may be considered as having "homogeneous" features. Those data have been smoothed and then refined so to take into account a dynamic trend for the future mortality on a time horizon of 30 years which appropriately fits to the most frequent ages of the PSEO members (40 to 58 years).

The outcome was the ICSLT 2013 which has been used in the present valuation

3.8. Matrimonial coefficients for active officials

The probabilities of being married at the time of departure on retirement for men and women remained the same as those used in the previous years, respectively 81% and 49%.

3.9. Assumed retirement age

The departure on retirement is supposed to occur at the time when the official benefits from his full rights, taking into account the reduction for early retirement from one side, and the Barcelona Incentive for late retirement from the other.

This assumption has been modelled to take into account the amendments arisen by the SR in force from 1st January 2014.

Further to the new legal provisions, assumed retirement ages range from 63 to 66 years, depending on service seniority and age.

3.10. Turnover

Since last year calculation turnover has been embedded so to provide a fairer picture of observed reality for the PSEO.

Actual experience has demonstrated that:

- a growing part of the PSEO members has the "contractual" agent status, and
- some of those contract agents have a fixed term contract for which the risk not to go beyond the legal maximum cumulated duration of contracts (6 years) is concrete.

Two types of turnover have been identified:

- **T1:** un-voluntary turnover, whose best example being a member leaving the PSEO further to the end of a fixed-term contract which is not renewed;
- **T2:** voluntary turnover, regarding for instance a PSEO member that freely decides to abandon his job, thus losing his status of PSEO member.

The same turnover rates as in the previous year have been used.

3.11. Other assumptions

Another actuarial assumptions to be considered, is for instance the loading factor for orphan and divorced spouse pensions, equal to 13% same as in the previous valuation.

4. Analysis of the DBO change

4.1. DBO valuation

The Defined Benefit Obligation (DBO) of the PSEO at 31.12.2016 has been valued at **67 523 571 964 €**, including the DBO of family allowances and the effect of correction coefficients.

The gross DBO liability (correction coefficient included) at 31 December 2016 (**67 524 million €**) has been compared with the one at 31 December 2015 (63 180 million €) and has revealed an increase of 4 343 million € (+6.9%).

Table V summarizes the main facts having an effect on the liability change:

Table V. Main variables and Gross DBO

	2016	2015	Change
Main variables:			
PSEO Members	84 536	83 229	1 307
Real Discount Rate	0.3%	0.6%	-0.3%
General Salary Growth	-0.1%	-0.1%	0.0%
Gross DBO (€m):			
DBO for Pensions	63 460	59 452	4 008
DBO for Family Allowances	2 481	2 247	234
DBO for Correction Coefficients	1 583	1 481	102
Total DBO (€m)	67 524	63 180	4 343

The liability can be split according to the various categories of beneficiaries.

In addition the weight of family allowances and correction coefficients has been isolated.

Table VI provides the related details.

Table VI. DBO breakdown at 31.12.2016

Population	DBO (€)
DBO for Active staff	37,698,933,396
DBO for Deferred Pensions	276,826,237
DBO for Retired non contributing members	20,930,355,432
DBO for Retired contributing members	2,907,905
DBO for Disabled members	2,408,755,985
DBO for Survivors' Pension	2,142,699,299
Pensions DBO	63,460,478,254
Family Allowances DBO	2,480,509,992
Total DBO, CC excluded	65,940,988,246
Correction Coefficients (CC)	1,582,583,718
Total DBO, CC included	67,523,571,964

4.2. DBO Change

According to the relevant provisions in the IPSAS 25 "Employee Benefits" accounting standard we disclose the DBO change from 2015 to 2016 as follows:

1. Service Cost;
2. Interest Cost;
3. Benefits paid;
4. Actuarial gains and losses from experience
5. Actuarial gains and losses from changes on demographic assumptions;
6. Actuarial gains and losses from changes on financial assumptions.

4.2.1 Service Cost.

The Service Cost, accounting for the new pension rights acquired by Members during 2016 in compensation for their work, is valued at 2 267.4 € m (3.6% of the DBO at 31.12.2015).

4.2.2 Interest Cost

The Interest Cost, accounting for the fact that being members one year older the time between the valuation date and the date at which they will receive their future benefits is reduced by one year, is valued at 1 263.6 € m (2.0% of the DBO at 31.12.2015).

4.2.3 Benefits paid

Benefits Paid, accounting the pension (retirement, invalidity or survivor) or transitional allowance paid to beneficiaries in 2016, amounted to 1 329.6 € m (-2.1% of the DBO at 31.12.2015). This amount leads to a decrease in the DBO as those benefits paid are no longer a liability for the future.

4.2.4 Actuarial gains and losses from changes on financial assumptions

Actuarial losses from changes on financial assumptions made the DBO increase by 3 500.5 € m (+5.5%), which can be decomposed as follow:

- the Real Discount Rate, which is based on market expectations as at 31 December of each year and is therefore intrinsically volatile, decreased from 0.6% to 0.3% since the last valuation: that change made the DBO increase by 3 387.7 € m (+5.4%),
- the update of the salary grid effective from 1st July 2016: that change made the DBO increase by 104.9 € m (+0.1%).

4.2.5 Actuarial gains and losses from changes on demographic assumptions

The actuarial losses from changes on demographic assumptions depended on the implementation of the assumed retirement age of 66, for staff recruited after 1 January 2014 thus falling under the latest Staff Regulations provisions. The impact has been estimated at -252.6 € m (-0.4% of the DBO at 31.12.2015).

4.2.6 Actuarial gains and losses from experience

The actuarial gains and losses from experience arise from differences between what was expected according to the assumptions made last year for 2016, and what really occurred in 2016.

Actuarial gains from experience, amounted to 1 105.9 € m (-1.8% of the DBO at 31.12.2015).

Table VII offers a view of the changes above mentioned.

Table VII - DBO change breakdown

PSEO Liability Change	Amount (€ m)	%
Benefit obligation as of 31.12.2015	63,180.2	100.0%
Service Cost	2,267.4	3.6%
Interest Cost	1,263.6	2.0%
Benefits paid	-1,329.6	-2.1%
Actuarial (gains) and losses from changes on financial assumptions	3,500.5	5.5%
Actuarial (gains) and losses from changes on demographic assumptions	-252.6	-0.4%
Actuarial (gains) and losses from experience	-1,105.9	-1.8%
Benefit obligation as of 31.12.2016	67,523.6	106.9%

5. Independent examination

Eurostat was assisted by a Consortium of qualified independent experts (Agilis SA and Prudential Ltd), with regard to the implementation of the methodology and to the definition and calculation of the corresponding actuarial assumptions.

Agilis SA and Prudential Ltd conducted an actuarial examination of the DBO as calculated by Eurostat, and released an unqualified actuarial opinion stating that:

"The total estimated value of provisional liability calculated by Eurostat (67.523.571.964 €) corresponds to the appropriate confidence interval for the fair value of statutory obligations to the members of the Pension Scheme of Officials of the European Union (PSEO) as at 31st of December 2016, in accordance with IPSAS 25 and standard actuarial practice."