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DRAFT SDMX DATA STRUCTURE DEFINITION FOR BPM6 AND THE EXTENDED BOP SERVICES CLASSIFICATION

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DRAFT SDMX DATA STRUCTURE DEFINITION FOR BPM6 AND THE EXTENDED BOP SERVICES CLASSIFICATION

This document is intended to inform the 2011 meeting of Working Party on Trade in Goods and Services (9th November) on the work to develop an SDMX encoding structure (Data Structure Definition or DSD) for balance of payments and international investment position statistics according to the methodological framework set forth in the sixth edition of the IMF Balance of Payments and International Investment Position Manual (BPM6).

Background

1. This note updates the WPTGS on the work being undertaken to leverage the Statistical Data and Metadata eXchange (SDMX) standards for the exchange of external sector statistics and on the collaboration effort with the Interagency Task Force on Statistics of International Trade in Services (TFSITS) members to incorporate the data exchange requirements under the Extended Balance of Payments Services (EBOPS 2010) classification. The work on the *BPM6*-based DSD, which started early-2010, is led by the European Central Bank (ECB), Eurostat, and the IMF (hereafter referred to as the Group), in coordination with the Organisation for Economic Co-operation and Development (OECD), and the SDMX Secretariat.

SDMX data structure definition for external sector statistics

2. SDMX is a standard to foster increased efficiency in the electronic exchange of data and metadata among international organizations and from national data-producing agencies. It is sponsored by the Bank for International Settlements, ECB, Eurostat, IMF, OECD, World Bank, and United Nations.

3. The purpose of establishing SDMX for the transmission of *BPM6*-based statistics is to move away from the situation where the same data are transmitted in different formats to different international organizations. Thus, the goal is to have one standard format that can be used by all organizations exchanging these data.

4. While the complete road map for the development and implementation of the BPM6 DSD is still being finalized, the objective, as indicated in the SDMX Action Plan for 2011-2012,¹ remains to have a DSD for global use ready for comments and pilot testing by mid-2012.
5. The intention is to provide a DSD for the external sector statistics that will support the reporting of many datasets in addition to balance of payments (BOP) and international investment position (IIP). For example, the DSD should provide for the encoding of data from the IMF Coordinated Portfolio Investment Survey (CPIS) and the IMF Coordinated Direct Investment Survey (CDIS).
6. To meet the objective of providing a DSD for global use, the Group collaborated with the domain groups responsible for two other statistical domains, namely Interagency Task Force on Statistics of International Trade in Services (TFSITS) for the Extended Balance of Payments Services Classification (EBOPS) and the OECD Working Group on International Investment Statistics (WGIIS) for the detailed data on direct investment statistics.
7. The collaboration with the TFSITS involved their review of a draft list of components included in selected concepts of the DSD with a view to adding all the components required to satisfy the reporting needs of EBOPS. These components and associated codes will be included in the draft DSD that will be circulated for external review when the work on the DSD gets to a more advanced stage.
8. As the development of the BPM6 DSD is still work in progress, the Group is not yet in a position to share with TFSITS members a complete draft of the DSD. However, for illustrative purpose, Appendix I provides a view of the model envisaged for the exchange of external statistics including the dimensions under consideration for that model. Appendix II shows how the EBOPS codes could be embedded into the standard BPM6 components, based on a provisional coding structure developed by the Group in collaboration with the TFSITS members from Eurostat, OECD, and WTO.

¹ See http://sdmx.org/wp-content/uploads/2011/10/SDMX-Action-Plan-2011_2015.pdf on the SDMX website.

The BPM6 Data Structure Definition – Draft List of Dimensions, and Options for Using the BPM6 DSD

9. SDMX provides an information model for describing statistical data, formats for encoding the data based on the information model, and standards for exchanging the data. In the development of the BPM6 DSD, the Group agreed that it would be better to approach the construction of the DSD from the core methodological concepts underlying the BOP and IIP data. The core concepts—referred to as “dimensions” in SDMX terminology—that are being considered for the DSD are illustrated in Table 1.

Table 1 – Dimensions¹ being considered for the BPM6 data structure definition

Dimension name	Description of the dimension
Reference area	Reporting country code (<i>e.g.</i> Portugal)
Reference Institutional sector	Institutional sector in the reporting area (<i>e.g.</i> general government)
Flow stock entry	Flow or stock variable indicator (<i>e.g.</i> positions)
Accounting entry	Type of flow or stock in relation to the reporting area (<i>e.g.</i> assets)
Bop item	External statistics item classification
Functional category	Classification by function of the financial investment (<i>e.g.</i> reserve assets)
Financial instrument classification	Breakdown by financial instrument (<i>e.g.</i> debt securities)
Maturity	Original maturity of financial item, combined with remaining maturity (<i>e.g.</i> short term)
Currency of denomination	Currency of issuance for financial items or invoicing for goods and services (<i>e.g.</i> euro)
Counterpart or partner area	Country of counterpart (<i>e.g.</i> Japan or rest of the world)
Counterpart sector	Institutional sector of counterpart (<i>e.g.</i> general government)
Frequency	Time series frequency (<i>e.g.</i> monthly)
Adjustment indicator	Specific adjustments or concepts for the time series (<i>e.g.</i> seasonal adjustment)
Series unit of measure	Unit of measure used for reporting the time series (<i>e.g.</i> euro)

1) Dimensions define the time series, therefore a valid code must be provided for each dimension in order to uniquely define the time series.

10. Following the SDMX information model, the combination of components from the dimensions above would provide the unique “key” to identify a time series. The benefit of such an approach is that all conceptually valid time series could be exchanged using a common approach, and not only the time series requested in a specific report form. For example, the IMF is interested in balance of payments transactions vis-à-vis the rest of the world, while the ECB is interested in euro-area countries’ transactions defined as “extra-euro area;” these two sets of time series are distinguished by the dimension “Counterpart Area.”

11. Permutation on the first eight dimensions listed above will allow defining all the time series keys for reporting the BOP components to the IMF. The same eight concepts are required to define the standard IIP components, while reporting the additional IIP analytical position data will require bringing into play the concept of the currency of denomination of the financial instrument.

12. The Group is currently looking at three options for developing the BPM6 DSD(s), which are described below.

13. Option 1. Develop a single Data Structure Definition that would carry multiple dimensions—the complete list of fourteen dimensions provided in Table 1—in addition to a few attributes (*e.g.* “confidentiality of observation”), which are required to completely describe a time series. Under this scenario, many time series would show a “not applicable” code for some dimensions.²
14. Option 2. Develop a single Data Structure Definition but with a reduced number of dimensions compared with the list proposed in Table 1. This option would imply concatenating some concepts (*e.g.*, BOP item, functional category, and financial instrument classification) into a single dimension. The resulting DSD would have less dimensions, some covering many concepts—the “mixed-dimension” approach—but all dimensions would be relevant for all time series. This option would impose limitations on the number of time series that could be reported with the BPM6 DSD but might be easier to encode.
15. Option 3. Develop many Data Structure Definitions, each with a reduced number of dimensions, so that all dimensions in the DSDs are relevant for all the time series being exchanged. For each DSD, there would be a few common core dimensions, and a few dimensions that vary across DSDs. Under this scenario, the reporting of goods and services would not require dimensions such as “reference institutional sector”, “functional category”, “financial instrument classification”, or “maturity”, while these dimensions would be required for reporting data for income and the financial account of the balance of payments. This option would imply that the data for the balance of payments would be reported using two separate DSDs.
16. The Group is still investigating the pros and cons of each approach. However, it is clear that the resulting DSD(s) will accommodate the reporting requirements of EBOPS, as this has always been a priority for the BPM6 DSD. Furthermore, the options under consideration are seen as having little impact on the tentative list of EBOPS codes in the BOP Items that are provided in Appendix II.

² For example, when coding “travel services” the dimensions “functional category”, “financial instrument classification”, and “maturity” would be coded as “not applicable”.

Provisional list of codes for BOP Items and the EBOPS Classification

17. During the summer of 2011, the Group work closely with members of the TFSITS from Eurostat, OECD, and WTO to accommodate the EBOPS data exchange requirements within the balance of payments items classification. The provisional list of codes from the BPM6 standard components for trade in services and the list of codes for the EBOPS classification are presented for illustrative purpose, as the finalization of the DSD, the identification of the various dimensions for the data exchange model, and the code lists for each of these dimensions remain work in progress. Notwithstanding future developments, the Group remains committed to working closely with the TFSITS to accommodate the exchange requirements of the EBOPS, as illustrated by Table 2 below. In Table 2, the EBOPS-specific codes are highlighted in yellow.

18. In the SDMX framework there is the possibility to work with flexible hierarchal code lists, *e.g.* hierarchies that allow a child-item to have one or many parent-items. A system could then be built to recognise the available hierarchies and therefore relate items automatically, downplaying the importance of a convention for the code list values. This technical feature allows meeting what could first appear as conflicting requirements for the BPM6 Standard Components and the EBOPS Classification.

19. Although a flat code list could be envisaged for the BOP item, a simple hierarchy is introduced in this example for supporting better memorisation of the code list. The draft code list rationale is as follows:

1. The first digit in the sequence identifies current account (1), capital account (2), and financial account (3). For current account, the second digit identifies goods (1), services (2), primary income (3), and so forth.

2. The code for the "of which" and "memorandum" items switch to letters at the utmost right (*e.g.* 6th place), with the sequence Z, Y, X, W, V, U, T,... If there is a hierarchy in the "of which/memorandum" item it will appear inverted in the code, *e.g.*

- 10000Z
- 1000ZZ
- 1000YZ
- 10000Y

3. c. In case there are two or more different hierarchies for the same total, when possible, one of the hierarchies will appear with the code running from left-to-right and the other from right-to-left, *e.g.*

- $100000 = 110000 + 120000 = 100001 + 100002$
- Hierarchy A
- 110000
- 120000
- Hierarchy B
- 100001
- 100002
- 100012
- 100022

Table 2. Tentative List of Codes for BOP Items

Descriptor	BOP Item
Services Account	120000
Manufacturing services on physical inputs owned by others	121000
<i>Goods for processing in reporting economy — Goods returned (credits), Goods received (debits)</i>	12100Z
<i>Goods for processing abroad — Goods sent (credits), Goods returned (debits)</i>	12100Y
Maintenance and repair services n.i.e.	122000
Transport	123000
<i>Alternative 1: Mode of Transport</i>	
Sea transport	123100
Passenger	123110
<i>Of which: Payable by border, seasonal, and other short-term workers</i>	12311Z
Freight	123120
Other	123130
Air transport	123200
Passenger	123210
<i>Of which: Payable by border, seasonal, and other short-term workers</i>	12321Z
Freight	123220
Other	123230
Other modes of transport	123300
Passenger	123310
<i>Of which: Payable by border, seasonal, and other short-term workers</i>	12331Z
Freight	123320
Other	123330
Postal and courier services	123400
<i>Extended classification of other modes of transport</i>	
Space transport	123301
Rail transport	123302
Passenger	123312
Freight	123322
Other	123332
Road transport	123303
Passenger	123313
Freight	123323
Other	123333
Inland waterway transport	123304
Passenger	123314
Freight	123324
Other	123334
Pipeline transport	123305
Electricity transmission	123306
Other supporting and auxiliary transport services	123307
<i>Alternative 2: What is Carried (For all modes of transport)</i>	
Passenger	123001

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Descriptor	BOP Item
<i>Of which: Payable by border, seasonal, and other short-term workers</i>	1230Z1
Freight	123002
Other	123003
Postal and courier services	123400
Other	1230Z3
Travel	124000
Business	124100
Acquisition of goods and services by border, seasonal, and other short-term workers	124110
Other	124120
Personal	124200
Health-related	124210
Education-related	124220
Other	124230
Alternative presentation for travel (for both business and personal travel)	
Goods	124001
Local transport services	124002
Accommodation services	124003
Food-serving services	124004
Other services	124005
<i>of which: Health services</i>	1240Z5
<i>of which: Education services</i>	1240Y5
Construction	125000
Construction abroad	125100
Construction in the reporting economy	125200
Insurance and pension services	126000
Direct insurance	126100
Life insurance	126110
<i>Gross life insurance premiums receivable (credits) and payable (debits)</i>	126111
<i>Gross life insurance claims receivable (credits) and payable (debits)</i>	126112
Freight insurance	126120
<i>Gross freight insurance premiums receivable (credits) and payable (debits)</i>	126121
<i>Gross freight insurance claims receivable (credits) and payable (debits)</i>	126122
Other direct insurance	126130
<i>Gross other direct insurance premiums receivable (credits) and payable (debits)</i>	126131
<i>Gross other direct insurance claims receivable (credits) and payable (debits)</i>	126132
Reinsurance	126200
Auxiliary insurance services	126300
Pension and standardized guarantee services	126400
Pension services	126410
Standardized guarantee services	126420
Financial services	127000
Explicitly charged and other financial services	127100
Financial intermediation services indirectly measured (FISIM)	127200
Charges for the use of intellectual property n.i.e.	128000

Descriptor	BOP Item
Franchises and trademarks licensing fees	128100
Licences for the use of outcomes of research and development	128200
Licences to reproduce and/or distribute computer software	128300
Licences to reproduce and/or distribute audio-visual and related products	128400
Licences to reproduce and/or distribute audio-visual products	128410
Licences to reproduce and/or distribute other products	128420
Telecommunications, computer, and information services	129000
Telecommunications services	129100
Computer services	129200
Computer software	129210
<i>Of which: Software originals</i>	12921Z
Other computer services	129220
Information services	129300
News agency services	129310
Other information services	129320
Other business services	12A000
Research and development services	12A100
Work undertaken on a systematic basis to increase the stock of knowledge	12A110
Provision of customized and non-customized research and development services	12A111
Sale of proprietary rights arising from research and development	12A112
Patents	12AA21
Copyrights arising from research and development	12AA22
Industrial processes and designs	12AA23
Other sales of proprietary rights arising from research and development	12AA24
Other research and development services	12A120
Professional and management consulting services	12A200
Legal, accounting, management consulting, and public relations services	12A210
Legal services	12A211
Accounting, auditing, bookkeeping, and tax consulting services	12A212
Business and management consulting and public relations services	12A213
Advertising, market research, and public opinion polling services	12A220
<i>Of which: Convention, trade-fair and exhibition organization services</i>	12A22Z
Technical, trade-related and other business services	12A300
Architectural, engineering, scientific, and other technical services	12A310
Architectural services	12A311
Engineering services	12A312
Scientific and other technical services	12A313
Waste treatment and de-pollution, agricultural and mining services	12A320
Waste treatment and de-pollution	12A321
Services incidental to agriculture, forestry and fishing	12A322
Services incidental to mining, and oil and gas extraction	12A323
Operating leasing services	12A330
Trade-related services	12A340
Other business services n.i.e.	12A350

Descriptor	BOP Item
<i>Of which: Employment services, i.e., search, placement and supply services of personnel</i>	12A35Z
Personal, cultural, and recreational services	12B000
Audio-visual and related services	12B100
Audio-visual services	12B110
<i>Of which: Audio-visual originals</i>	12B11Z
Artistic related services	12B120
Other personal, cultural, and recreational services	12B200
Health services	12B210
Education services	12B220
Heritage and recreational services	12B230
Other personal services	12B240
Government goods and services n.i.e.	12C000
Embassies and consulates	12C100
Military units and agencies	12C200
Other government goods and services n.i.e.	12C300
Tourism-related services in travel and passenger transport	12400Z
EBOPS 2010 complementary groupings	
Audio-visual transactions	12B11Y
<i>Of which: C.1.1 Licences to use audio-visual products</i>	12841Z
Cultural transactions	12B10Z
Computer software transactions	12921Y
<i>Of which: C.3.1 Licences to use computer software products</i>	12830Z
Call-centre services	12000Y
Total services transactions between related enterprises	12000Z
Total trade-related transactions	12A34Z
Environmental transactions	12A32Z
Total health services	12000X
Total education services	12000W