

**Business Innovation 2012**  
**National Reference Metadata in ESS Standard for Quality Reports Structure (ESQRS)**  
**National Statistics Office (NSO)**  
**Time Dimension: 2012**  
**Data Flow: CIS\_ESQRS\_2**

Concept name	
1 Contact	
1.1 Contact organisation	National Statistics Office (NSO)
1.2 Contact organisation unit	Unit B4: Business Registers, Directorate B - Business Statistics
1.3 Contact name	Ms. Christianne Micallef
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2 Introduction	The CIS surveys collects information about technical and non technical innovative activities carried out in a specific three-year period in the business sector. Technical innovation refers to new or significantly improved products, while non technical refers to organisational and marketing innovations. Data for this study is collected through a census of enterprises employing 10 or more persons.
3 Quality management - assessment	The CIS survey follows the methodology established within <a href="#">EC Regulation 995/2012</a> , concerning the production and development of Community Statistics on Science and Technology. Comparability of data with previous years based on the same methodology is the main assessment for quality.
4 Relevance	
4.1 Relevance - User Needs	Users include the European Commission (for the European Innovation Scoreboard); the Malta Council for Science and Technology, the Malta Enterprise (to satisfy international requirements and produce National Policy); researchers, students, enterprises and businesses.
4.2 Relevance - User Satisfaction	The latest User satisfaction survey was conducted in 2014 and provides results on the quality, timeliness and usefulness of news releases as well as the quality, frequency and timeliness of requests. Since the survey provides information for each production unit at the NSO and not by domain, such information is not available solely for the Innovation Survey. Results of the user satisfaction survey results can be accessed through:

	<a href="http://nso.gov.mt/en/News_Releases/View_by_Unit/Unit_01/Methodology_and_Research/Pages/User-Satisfaction-Survey.aspx">http://nso.gov.mt/en/News_Releases/View_by_Unit/Unit_01/Methodology_and_Research/Pages/User-Satisfaction-Survey.aspx</a> .
4.3 Completeness	100% complete since all requested data is provided.
4.3.1 Data completeness - rate	All compulsory variables applicable to Malta are transmitted. Data is 100% complete.
5 Accuracy and reliability	
5.1 Accuracy - overall	<p>The CIS questionnaire is inbuilt with a number of compulsory questions related to innovation type. The data collection is based on face-to-face interviewing among a census of companies employing ten or more employees. All questionnaires are vetted to ensure that the logic of the questionnaire is followed. Interviewers would be asked to review data with the enterprise in the event of any queries.</p> <p>The application used for data entry of the CIS survey also contains inbuilt validation checks. Furthermore, if through the CIS survey it is revealed that Research and Development took place; the enterprise would need to respond to another survey entitled 'Research and Development survey'; and the values from both surveys are cross checked. Moreover, the data of the year in question is compared to the previous survey data for consistency. Enterprises are contacted by telephone in the event of any queries.</p> <p>In view of these quality checks, CIS data can be considered of good quality.</p>
5.2 Sampling error	Not applicable, the survey is based on a census.
5.2.1 Sampling error - indicators	Not applicable.
5.3 Non-sampling error	<p>The main forms of non-sampling errors are item and unit non-response. In case of unit non-response, a number of follow ups are implemented to ensure that the relevant unit responds to the questionnaire. Data from the previous year is considered when no contact is made, and enterprises with innovation activity are considered as innovative in the current reference period.</p> <p>With respect to item non-response the enterprise is contacted in order to provide the missing information. For questions related to monetary amounts, the chasing is continued until data is actually provided. For other items, chasing is done to a certain extent, with missing data being eventually imputed.</p> <p>Data entry errors might also occur since data entry is subject to human error. This is kept to minimum through inbuilt validation rules for skipping and routing of questions.</p>
5.3.1 Coverage error	The target population for this survey is selected from the Business Register. Coverage errors may arise due to inaccurate information recorded in the sampling frame, namely closures, inactive enterprises, and changes in the employment size class; which may result in a company to feature while having less than 10 employees.
5.3.1.1 Over-coverage - rate	<ul style="list-style-type: none"> <li>• Number of enterprises employing 10 to 49 employees totalled 1,345 according to frame. Of these, 210 have changed stratum, yielding a misclassification rate of 15.6%.</li> <li>• Number of enterprises employing 50 to 249 employees totalled 279 according to frame. Of these, 2 have changed stratum, yielding a misclassification rate of 0.72%.</li> <li>• Number of enterprises employing 250 employees or more totalled 55 according to frame. Of these, 2 have changed stratum, yielding a misclassification rate of 3.64%.</li> </ul>

5.3.2 Measurement error	Data is collected by interviewers, while vetting is done by trained and experienced NSO staff. Data inputting software contains validation checks catering for the logic of the questionnaire to ensure that measurement errors are minimal.
5.3.3 Non response error	Attempts to keep non-response errors at a minimum consist of the use of reminders/recalls to enterprises. As recommended in the survey guidelines, three reminder letters are sent to remaining non-respondents. Additionally, the larger enterprises are re-contacted by phone or e-mail in order to remind them to fill in and deliver the survey questionnaire. The overall response rate is of 83.1 per cent.
5.3.3.1 Unit non-response - rate	The overall unweighted unit response rate by NACE and size class is equal to 83.12%. A breakdown of unit response rate by NACE and size class can be found in Annex A (Table 1).
5.3.3.2 Item non-response - rate	Item non-response is immediately tackled with the respondents through telephone calls or e-mail. Interviewers are expected to return fully filled questionnaires. Turnover and employment figures, which are none the less left empty, are taken from the Business Register (BR) directly. Eventually all replies are checked for consistency with the BR.  Specific rate of item non-response is not available.
5.3.4 Processing error	Following the collection of data, a series of steps are followed to process the data and reduce processing errors. <ul style="list-style-type: none"> <li>• Questionnaires are individually vetted in order to capture incorrect or missing information. Should any information result to be missing or unclear, enterprises are contacted individually for clarification.</li> <li>• Data is entered through an application program set up by the IT unit. Data editing is facilitated by means of auto validations within the same application. Such validations ensure that the logic of the questionnaire is met.</li> <li>• Data is then compared to previous years to ensure a reasonable smooth series of data. Any apparent fluctuations are looked into and enterprises are contacted individually to justify and/or correct any misunderstandings.</li> </ul>
5.3.4.1 Imputation - rate	The exact rate with which original collected values are replaced is not available. Upon receipt of questionnaires, enterprises are contacted individually in case of non-response, and a value is sought. If non-respondents have not reported expenditure the year before, they are considered as non-innovative in the year under study. Non-innovative enterprises are still taken as eligible for the scope of this survey.
5.3.4.2 Common units - proportion	Not applicable, since data about each unit is only gathered by means of the survey. No administrative data sources are used.
5.3.5 Model assumption error	Not applicable, since no model is assumed.
5.3.6 Data revision	Not applicable. Released data is considered final.
5.3.6.1 Data revision - policy	The NSO's general dissemination policy can be accessed through: <a href="http://nso.gov.mt/en/nso/About_NSO/Documents/NSO_Policies/Dissemination.pdf">http://nso.gov.mt/en/nso/About_NSO/Documents/NSO_Policies/Dissemination.pdf</a> . However, CIS data is considered final once it is validated and released.
5.3.6.2 Data revision - practice	The released data is considered final after the validation process.

5.3.6.3 Data revision - average size	The released data is considered final after the validation process.
5.3.7 Seasonal adjustment	Not applicable.
6 Timeliness and punctuality	
6.1 Timeliness	18 months from reference period to transmission of data.
6.1.1 Time lag - first result	18 months from reference period.
6.1.2 Time lag - final result	Data is delivered before the stipulated dates (18 months).  Considering News Releases related to Business Innovation, disseminated between June 2012 and June 2015, no news release was late.
6.2 Punctuality	Data is delivered before the stipulated dates, i.e. 18 months after the reference period.
6.2.1 Punctuality - delivery and publication	Data is delivered before the stipulated dates, i.e. 18 months after the reference period.
7 Accessibility and clarity	
7.1 Dissemination format - News release	The news release on Business Innovation is published every two years. The latest release covers the 2010-2012 period and can be accessed through the following link: <a href="http://nso.gov.mt/en/News_Releases/View_by_Unit/Unit_B4/Business_Registers/Pages/Business-Innovation.aspx">http://nso.gov.mt/en/News_Releases/View_by_Unit/Unit_B4/Business_Registers/Pages/Business-Innovation.aspx</a> .
7.2 Dissemination format - Publications	Not applicable.
7.3 Dissemination format - online database	Innovation data is included in the Eurostat's database, which can be accessed through: <a href="http://epp.eurostat.ec.europa.eu/portal/page/portal/statistics/search_database">http://epp.eurostat.ec.europa.eu/portal/page/portal/statistics/search_database</a> .
7.3.1 Data tables - consultations	Tabular data is provided as requested to Eurostat The number of times that these data tables are viewed is not available.
7.4 Dissemination format - microdata access	Not applicable. Tabular data is sent to Eurostat.
7.5 Documentation on methodology	The methodology established for CIS data is documented within council regulation 995/2012, concerning the production and development of Community Statistics on Science and Technology.

7.5.1 Metadata completeness - rate	Not applicable. Metadata reports for CIS are not produced.
7.5.2 Metadata - consultations	Not applicable. Metadata reports for CIS are not produced.
7.6 Quality management - documentation	In early 2014, the NSO documented the processes and procedures followed in the collection and dissemination of data for each unit for internal purposes. In addition, a quality report is produced every alternate year and sent to Eurostat.
7.7 Dissemination format - other	Adhoc requests may be supplied through the NSO website through the following link: <a href="http://nso.gov.mt/en/Pages/NSO-Home.aspx">http://nso.gov.mt/en/Pages/NSO-Home.aspx</a> .
8 Comparability	
8.1 Comparability - geographical	Since this is an EU wide survey, the results are comparable between all member states. Moreover, all countries adhere to the same set of definitions and methodological recommendations.
8.1.1 Asymmetry for mirror flow statistics - coefficient	Not applicable.
8.2 Comparability - over time	CIS data is comparable over time from 2004 onwards. Figures prior to 2008 were also reported in Euro.
8.2.1 Length of comparable time series	Not applicable. No break in series has ever been recorded.
8.3 Comparability - domain	All enterprises that report any R&D in the CIS are included in the R&D survey, and each reply is checked across surveys. R&D expenditure reported in the CIS is also captured in the R&D survey.
9 Coherence	
9.1 Coherence - cross domain	Not applicable. No administrative or external sources exist.
9.1.1 Coherence - sub annual and annual statistics	Not applicable. CIS data is collected every 2 years (not annual or sub annual).
9.1.2 Coherence - National Accounts	Not applicable.
9.2 Coherence - internal	CIS data are not normally comparable to data from other business surveys, since the Structural Business Statistics (SBS) Survey does not collect information on innovation expenditure. However, included the CIS questionnaire includes one question on the expenditure of intramural R&D and this is cross checked with information provided in the R&D survey. In fact, CIS data is coherent with R&D data.
10 Cost and Burden	The costs associated with the collection and production of CIS data include staff costs (approx. 30,000); data collection costs (approx. 400); and other costs (approx. 18,400). These yield a total cost of 48,800.

	The time required by innovative enterprises to complete the questionnaire normally takes around 3.5 hours. On the other hand, the handling time for non-innovative enterprises to complete the questionnaire is equal to 1 hour.
11 Confidentiality	
11.1 Confidentiality - policy	Confidential data sent to Eurostat is flagged to prevent publishing. Furthermore, if any requested data is identified as confidential, this will not be provided. The confidentiality policy of the NSO can be accessed through: <a href="http://nso.gov.mt/en/nso/About_NS0/Documents/NSO_Policies/Confidentiality_of_personal_and_commercial_data.pdf">http://nso.gov.mt/en/nso/About_NS0/Documents/NSO_Policies/Confidentiality_of_personal_and_commercial_data.pdf</a> .
11.2 Confidentiality - data treatment	Data is flagged as primary confidential if at least one of the following criteria is satisfied: <ul style="list-style-type: none"> <li>• The number of units contributing to a cell value is less than 3.</li> <li>• There are a number of dominant contributors to a cell value, i.e. the level of contribution of a pre-defined number of entities exceeds a certain percentage.</li> </ul> Secondary confidentiality is also catered for so that primary confidential cells cannot be disclosed.
12 Statistical processing	
12.1 Source data	The data is collected by means of a survey. The survey is a census among enterprises employing 10 or more employees.
12.2 Frequency of data collection	The current frequency of CIS is biennial.
12.3 Data collection	A number of interviewers are selected in collaboration with MCST (Malta Council for Science and Technology). Interviewers then approach the selected enterprises and conduct face-to-face interviews. Questionnaires are brought to the office by interviewers.
12.4 Data validation	Once interviewers bring the completed questionnaires to the office, these are initially vetted in front of the interviewer, especially to check that the questionnaire logic is followed. This is further validated during data entry by means of various inbuilt validation rules included in the data entry application. A second round of vetting is done more attentively by a statistician. At this stage data is also compared with previous years for consistency and should any queries arise the enterprise is contacted by telephone.
12.5 Data compilation	Data entry is compiled through an application, with inbuilt validation rules, designed by the NSOs IT unit. Once the data entry is finalised the data is processed and analysed for reporting by a statistician.
12.6 Adjustment	Not applicable
13 Comment	Not applicable.