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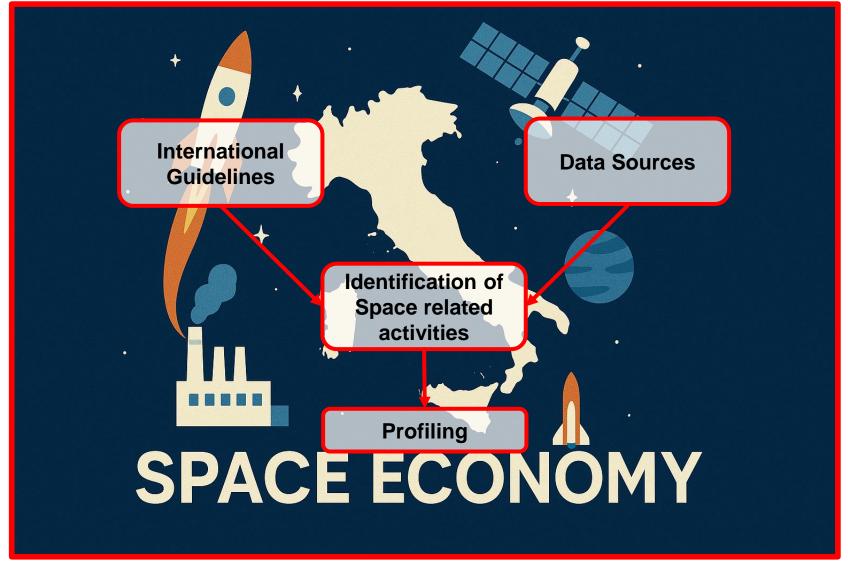
TOWARDS A THEMATIC ACCOUNT OF THE SPACE ECONOMY IN ITALY METHODOLOGY AND FIRST EVIDENCES

# DATA SOURCES AND METHODS FOR MEASURING THE SPACE ECONOMY

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#### **Outline**





# Scope and classifications of the space economy

 Using definitions from OECD's Handbook on Measuring the Space Economy and Eurostat's Developing a space economy account for Europe, business units are classified based on their involvement in the space economy value chain, distinguishing among:

**Upstream** 

Activities producing goods and services that are used in space or directly support their production

**Downstream** 

Activities that use upstream goods and services as necessary input for (at least part of) their production processes

**Space-derived** 

Activities that use upstream goods and services as non necessary input for (at least part of) their production processes

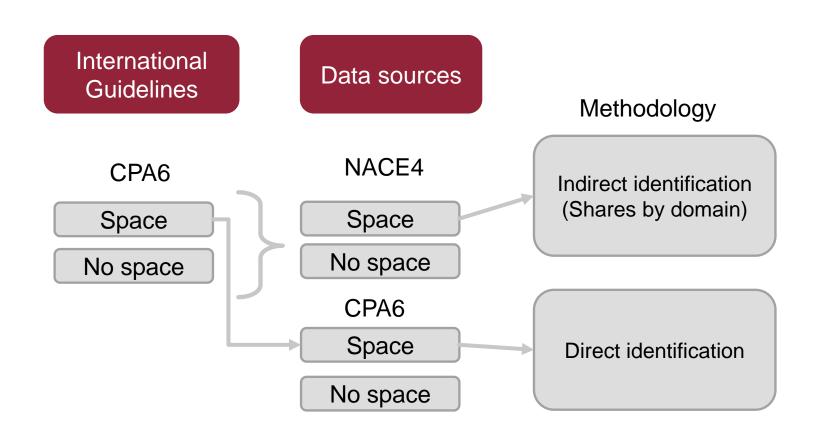


### Overview of data sources and methodology

The guideline is based on "International, North American and European Statistical Classifications for Space Economy Measurement", developed jointly by the OECD, the US BEA, ESA, Eurostat and the JRC



List of 6 digits CPA reviewed in collaboration with the Italian Space Agency (ASI) to validate their accurate representation within the Italian statistical system





#### **Data Sources**

Frame Register

Business Register with NA variables

Permanent Census of enterprises

Share of turnover within the aerospace supply-chain

**Prodcom Survey** 

Value of manufactured goods produced and identified at 6-digits CPA

ISA - Business studies

Value of secondary activities at 4-digits NACE

**CPA List** 

Taxonomy for Upstream, Downstream, Space-derived, Non-space

International Trade

Exports/Imports of goods/services

S 13 List/Specific Surveys

Register of GG Units with NA variables



ASI Fundings

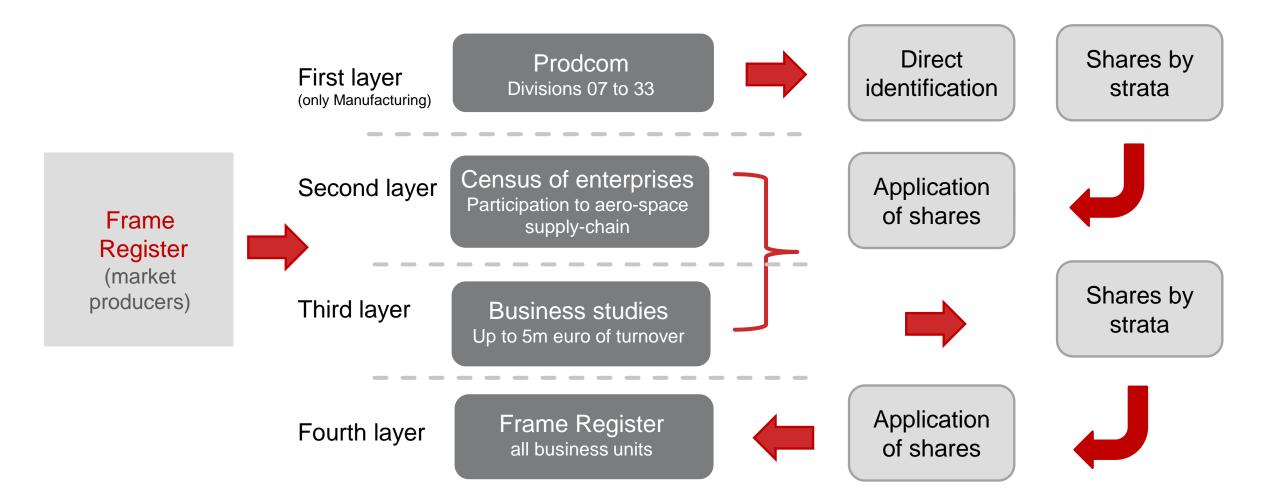


#### **Methodology | Overview**

- The definition of space-related activities of (market and non-market) producers follows a bottom-up approach exploiting available microdata;
- The complexity of identification and the limited information call for a sequential identification strategy, different sources of information are used in different steps to allow the better identification of space-related activities
- For market producers the procedure is composed of two steps:
  - Decision tree algorithm to define space-related share of activities for each producer based on available microdata (different for manufacturing and other industries)
  - Profiling of business units (three layers: "Signal from Strong Sources", "ASI list", "Exports of space-products")
- For non-market producers, space-related activities have been identified based on ASI/ESA funding and based on the main activity of the producer within the S13 list



# **Methodology | Decision tree algorithm**





### Methodology | Profiling

- Noise may be introduced along the last step of the decision tree algorithm, as it may assign spacerelated shares to firms that are not actually involved in the space industry.
- To address these possible false positives, firms are verified through a profiling process that relies on three levels:

Strong Sources

Business units identified by the strong sources (Prodcom, Census, and ISA)

**ASI** list

Business units on the ASI list

COE Data

Business units that export space-related goods at NC8 level



#### From data sources to the outcome

- National Accounts framework benefits from a large volume of microdata, coming from surveys and administrative records, which cover a large strand of informative needs.
- This granularity of information allows for microfounding the extension of National Accounts to measure the contribution of the space economy and stress the characteristics of "space-related" firms across a set of dimension of analysis:
  - Sectoral
  - Size-class
  - Governance settings
  - Geography





# Thank you.

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