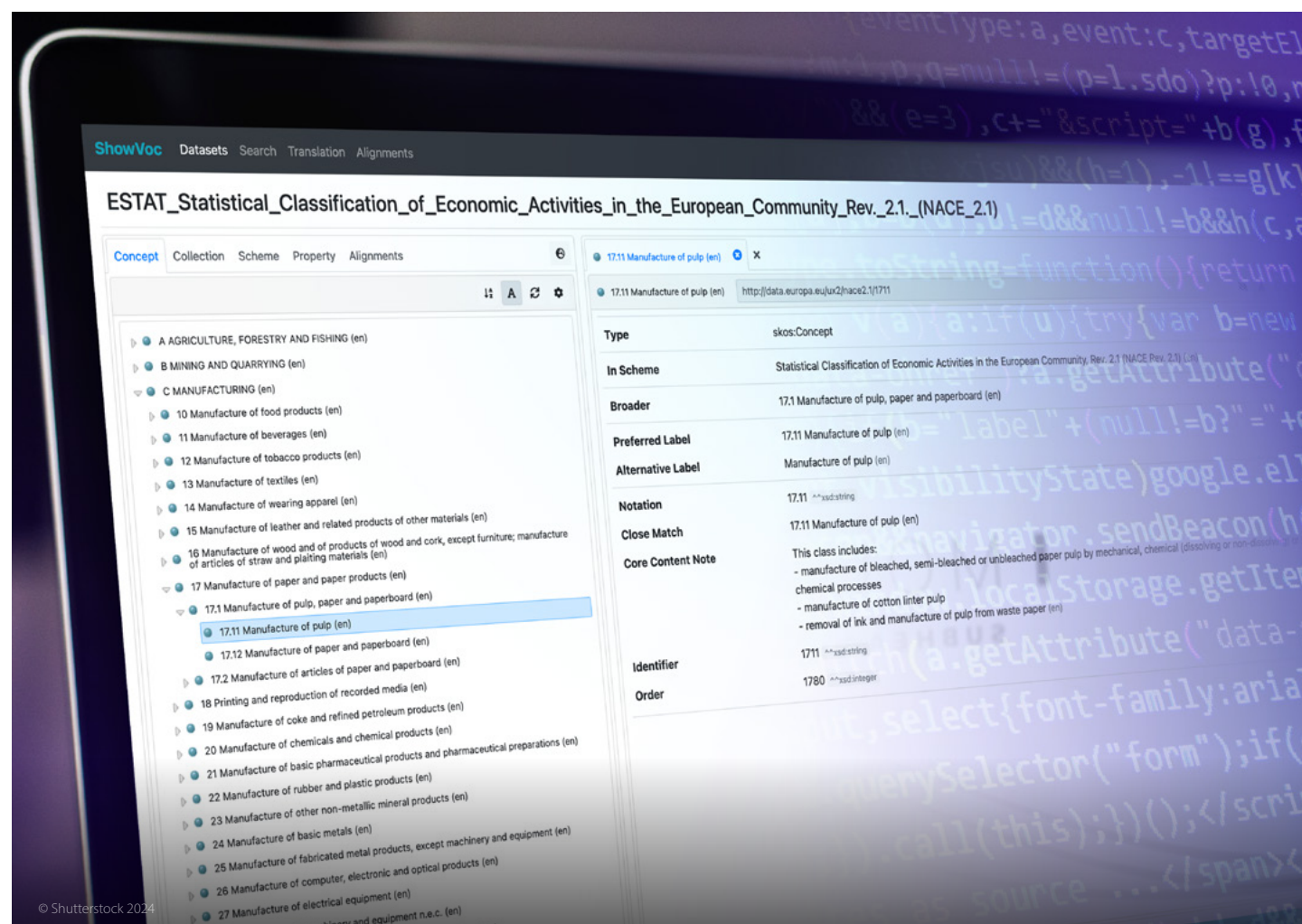


Machine learning for automated classification according to NACE

Updating the classification of economic activities in the EU



The project

The statistical classification of economic activities in the European Community ('Nomenclature statistique des activités économiques dans la Communauté européenne,' commonly known as NACE), is the classification of economic activities in the EU. It is used for a wide variety of European statistics in the economic, social, environmental and agricultural domains.

As the EU economy has evolved, it has become increasingly important to update the NACE classification to meet the needs of Member States. For the past few years, Eurostat has worked with its partners in the European Statistical System (ESS) on this update. This new version (NACE Rev. 2.1) can be accessed in the [Official Journal](#) and as [Linked Open Data](#).

As part of the ESS Innovation Agenda, the innovation activity stimulates the exchange of Member States on the development of state-of-the-art machine learning approaches for recoding and automated classification of statistical units in the statistical business registers (SBRs). This involves training algorithms to recognise patterns and make decisions based on data. It enables systems to learn and improve from experience without being programmed.

As such, the goal of the innovation activity is to identify best practices that can facilitate the implementation of NACE Rev. 2.1 and reduce administrative tasks.



The motivation

The review of NACE was driven by the need to reflect significant changes in the European economy. Over the years, new economic activities have emerged, and existing ones have evolved, making it necessary to update the classification to ensure it accurately represents the current economic landscape. The aim is to produce more relevant and accurate statistics, which can be used for policymaking, economic analysis and business decisions.

The implementation of NACE Rev. 2.1 presents an opportunity to exchange innovative best practices on the use of machine learning algorithms for diminishing the labour-intensive activity of manually recoding statistical units in SBRs according to NACE Rev. 2.1.



The methodology

The structure of NACE Rev. 2.1 was established through [Commission Delegated Regulation 2023/137 on 10 October 2022](#). To support the implementation of NACE Rev. 2.1, Eurostat provided grants and surveyed the National Statistical Institutes to collect good practices and identify remaining needs and challenges during a dedicated NACE implementation webinar on 30 April 2024. Member States as well as leading international partners presented their implementation strategies for the new economic activity classifications as well as innovative machine learning approaches for the coding and recoding of statistical units in their SBRs. Correct coding e.g. of enterprises' NACE codes in the SBRs are fundamental for the provision of European statistics according to the new NACE.

The April 2024 webinar marked the successful conclusion of the project. Its results will be used in the continued collaboration of Member States on sharing best practices on automatic or semi-automatic classification of statistical units according to NACE. This is particularly relevant in a collaborative ESS project named 'One-Stop-Shop for Artificial Intelligence and Machine Learning for Official Statistics', which includes a work package 'From Text to code'.

Technologies and methodologies involved: Recoding, semantic technologies, AI/ML.



The team

Project coordinator:

Eurostat

Member States involved:

All EU Member States are involved.

Project Owner:

The ESS Directors of Methodology (DIME), The ESS IT Directors' Group (ITDG) and the Business Statistics Directors' Group (BSDG).

Contact:

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The timeline

- **Project initiation:** 2022
- **Project end:** 2024



More information

Link to the [NACE implementation webinar documents](#)

Link to the [NACE Rev. 2.1 explanatory notes and correspondence tables](#)