# WIPO’s 6th Conversation on Frontier Technologies: AI-Based Innovations

**OUTLINE**:

- TÜRKPATENT’S APPROACH TO AI-BASED INVENTIONS
- TÜRKPATENT’S ACTIVITIES TO FOSTER AI-BASED INNOVATIONS
- THE CURRENT STATE OF THE AI-BASED PATENTS IN TÜRKİYE

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# TÜRKPATENT'S APPROACH TO AI-BASED INVENTIONS

- The main goal of most AI techniques are regression, classification, clustering, and dimensionality reduction that are considered **abstract** in their nature. The fact that they are trained does not alter the notion.

- Despite sounding technical, the terms such as **SVM**, **ANN** represent abstract models lacking technical character. Hence, they cannot stand as subject-matter.

Therefore; AI applications contribute the technical character of the invention, **if**

✓ They serve a certain technical purpose

✓ They are used in a specific technical implementation

# TÜRKPATENT'S APPROACH TO AI-BASED INVENTIONS

## Subjects Including Technical Purpose

- A heart-rate monitoring device that utilizes **ANN** to identify cardiac arrhythmia

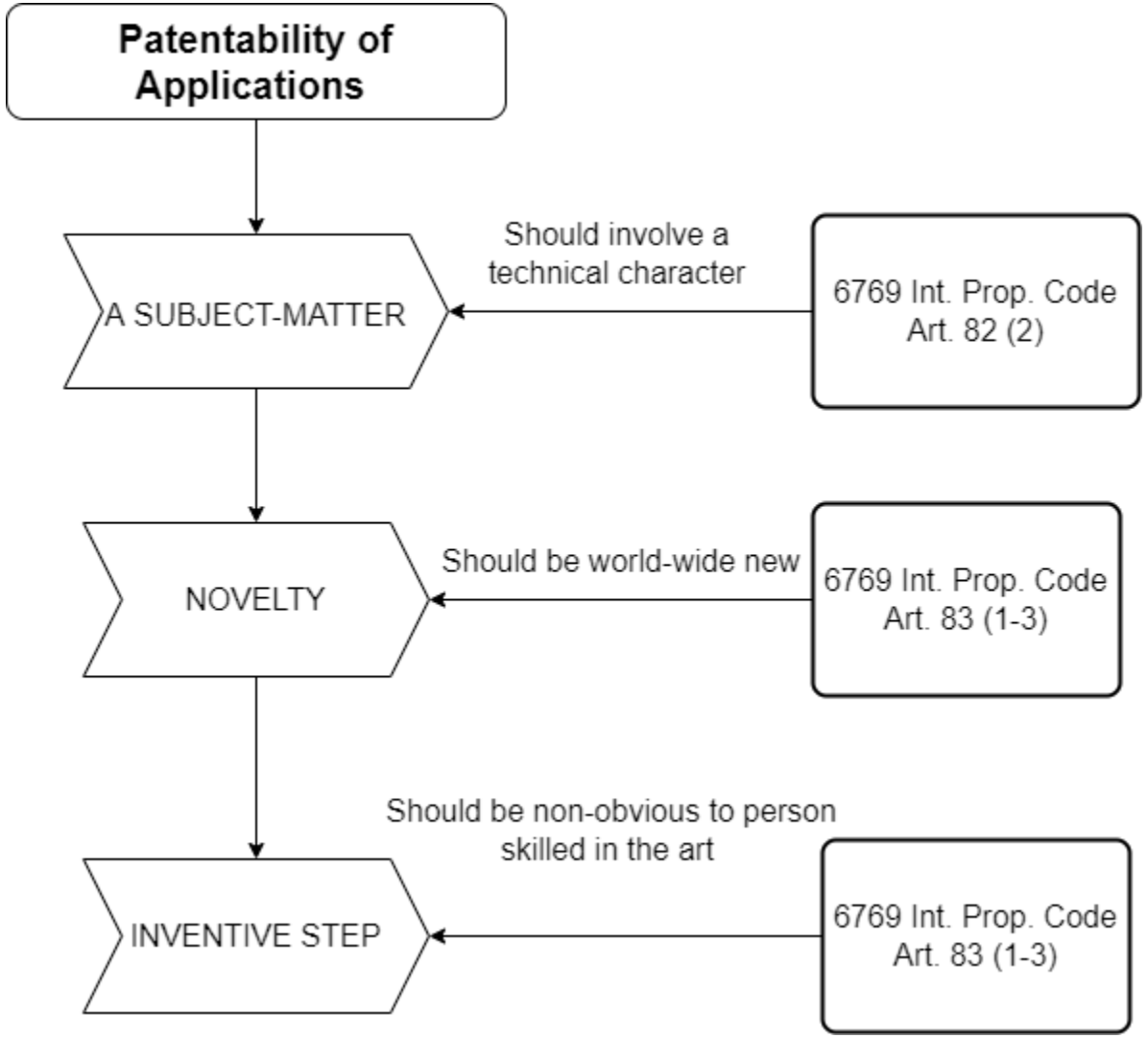
- Classification of digital images based on low-level features such as pixels

## Subjects Including Non-Technical Purpose

- Classification of corpus based solely on text content

- ANN formed to represent recommendations

# TÜRKPATENT'S APPROACH TO AI-BASED INVENTIONS




Given that an invention is applicable to the industry, it should meet the criteria shown in the flow-diagram.

# TÜRKPATENT'S APPROACH TO AI-BASED INVENTIONS

A severe obstacle observed in the AI-Related Patent Applications is **insufficient disclosure.**

- If an AI model is trained for a specific technical purpose, the skilled person is likely to need clear information about how the model is trained.

- The skilled person is likely to need training information of the implemented AI model.

- To satisy the sufficiency of the disclosure, it would be quite effective to disclose the weights of the trained model.

- *I/O Data, Test Results, Experimental Data*

# TÜRKPATENT'S ACTIVITIES TO FOSTER AI-BASED INNOVATIONS

In 2020, TÜRKPATENT in collobration with Presidency of Turkish Republic prepared a report expressing the measures to be taken for the emerging technology fields.

Those fields included but not limited to:

- *Internet Of Things*
- *Cloud Computing*
- *Big Data and Data Mining*
- *AI*
- *AI and Trademark Law*
- *AI and Industrial Designs*
- *Blockchain Technology*

# TÜRKPATENT'S ACTIVITIES TO FOSTER AI-BASED INNOVATIONS

The report comprises many subsections including the approaches of the national office, EPO and other PTOs to the AI-based invention in terms of:

- Debate on the sufficiency of disclosure
- Decisions reached for specific claim configurations featuring AI based techniques.
- AI as the inventor
- Machine skilled in the art
- Relationship with AI and IP

# TÜRKPATENT'S ACTIVITIES TO FOSTER AI-BASED INNOVATIONS

- TÜRKPATENT is building its own guide to tackle the issues that AI-based patent applications contain.

- The guide includes implied recommendations to the applicants and the examiners.

- TÜRKPATENT is one of the leading participant and contributor of «***National AI Strategy***» initiated by Minister of Industry and Technology

- The guide aims to draw an easy-to-understand line between the patentable AI-based inventions and the unpatentable ones through the examples and instances.

# TÜRKPATENT'S ACTIVITIES TO FOSTER AI-BASED INNOVATIONS

The Office organizes and participates meetings, training sessions, Q & A sessions with TTOs, incubation centers, corporate firms, SMEs to transmit expert-level information about the patentability of the AI related inventions.

The Office participates the national/international organizations either in person or online to track the recent developments in the field.

TÜRKPATENT has also been a contributing actor of incentive protocols to provide more people to file their inventions without having financial burden.

# THE CURRENT STATE OF THE AI-BASED PATENTS IN TÜRKİYE

Now, we will discuss the current situation of the AI-based patent applications in Türkiye.

Data retrieved from the open database Turkish Patent and Trademark Office comprises 543 **published** patent applications filed after 2017 and published before August 2022.

Relevant keyword search was performed in patent abstracts to obtain AI-based patent. Baseline keywords include:
AI, ANN, CNN, machine learning, logistic regression etc.

# THE CURRENT STATE OF THE AI-BASED PATENTS IN TÜRKİYE


The wordcloud displays the most frequent terms in the patent abstracts in **red** and **orange**, which read as:

- **artificial**
- **data**
- **system**
- **intelligence**
- **image**
- **analysis**
- **model**
- **detection**

# THE CURRENT STATE OF THE AI-BASED PATENTS IN TÜRKİYE

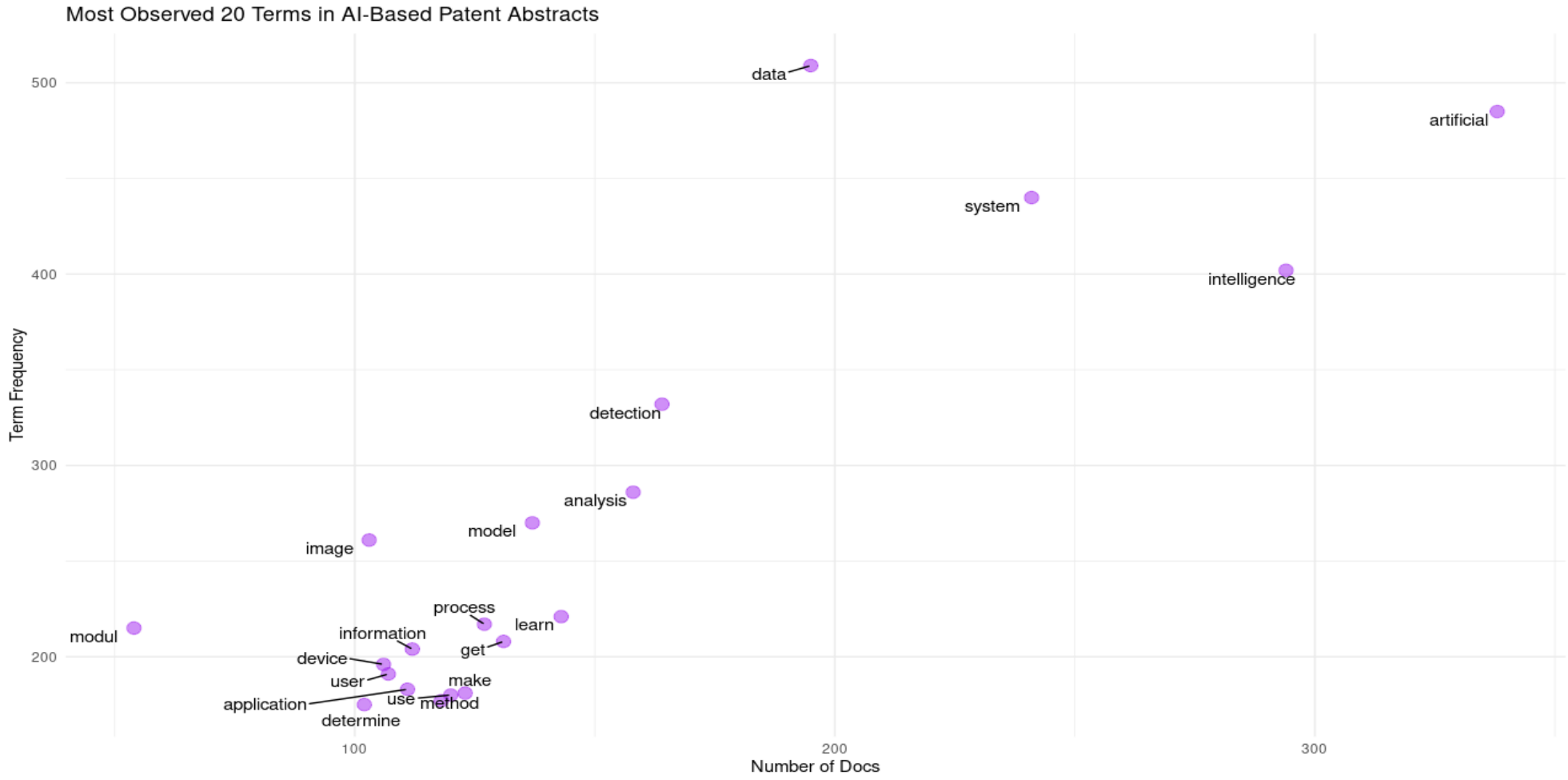
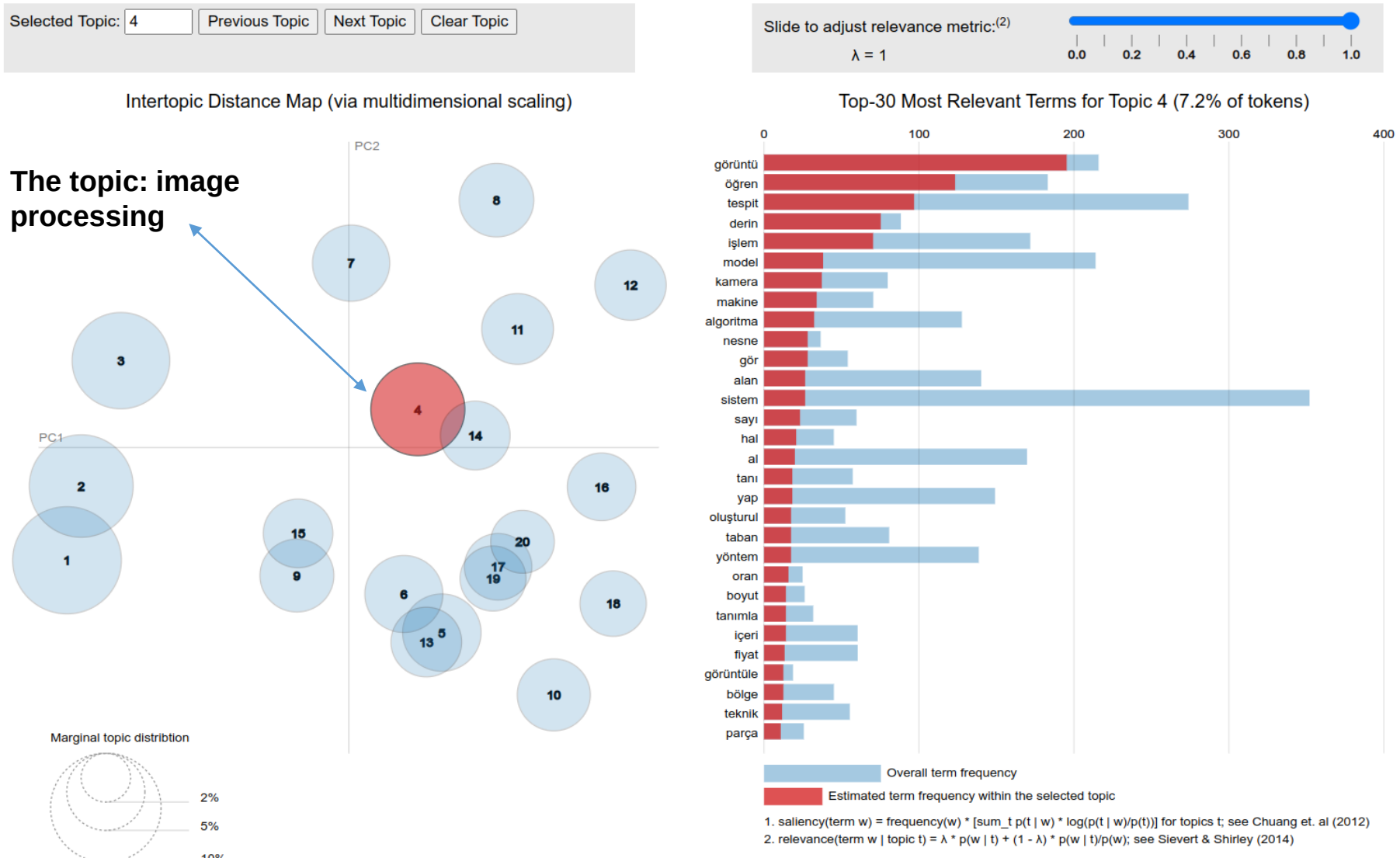



**Figure: Corresponding Most Observed 20 Terms in abstracts according to their term frequency.**

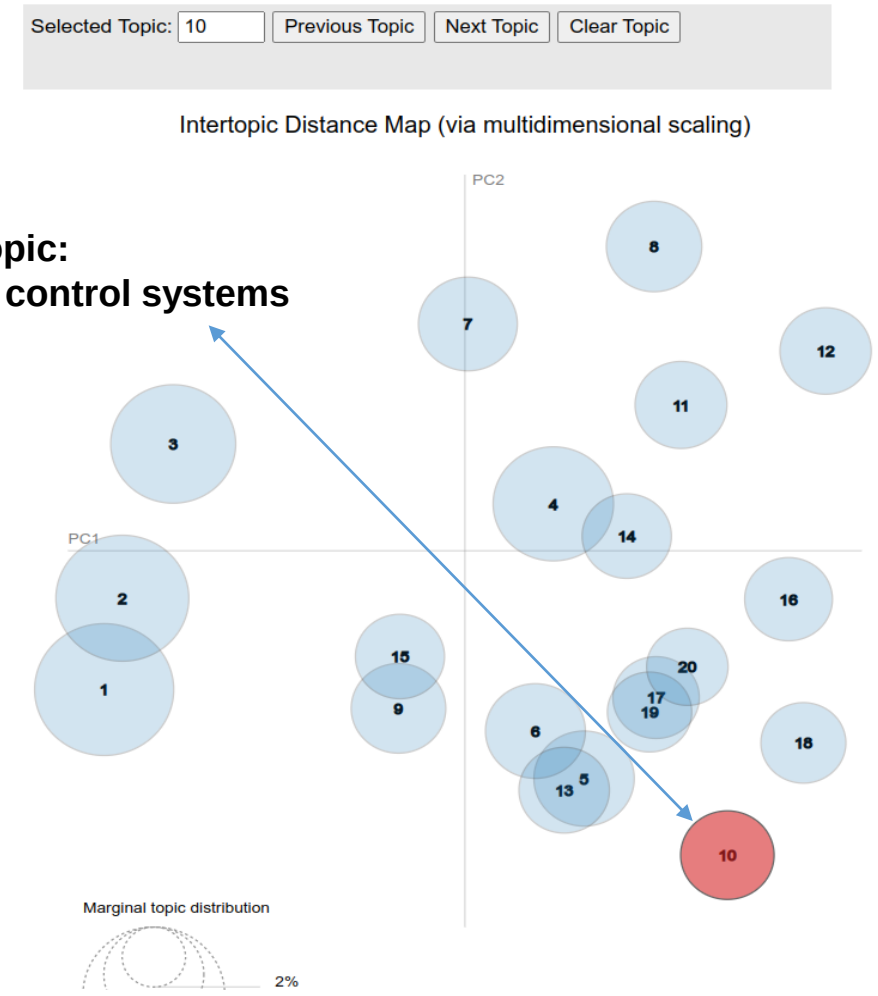
# THE CURRENT STATE OF THE AI-BASED PATENTS IN TÜRKİYE

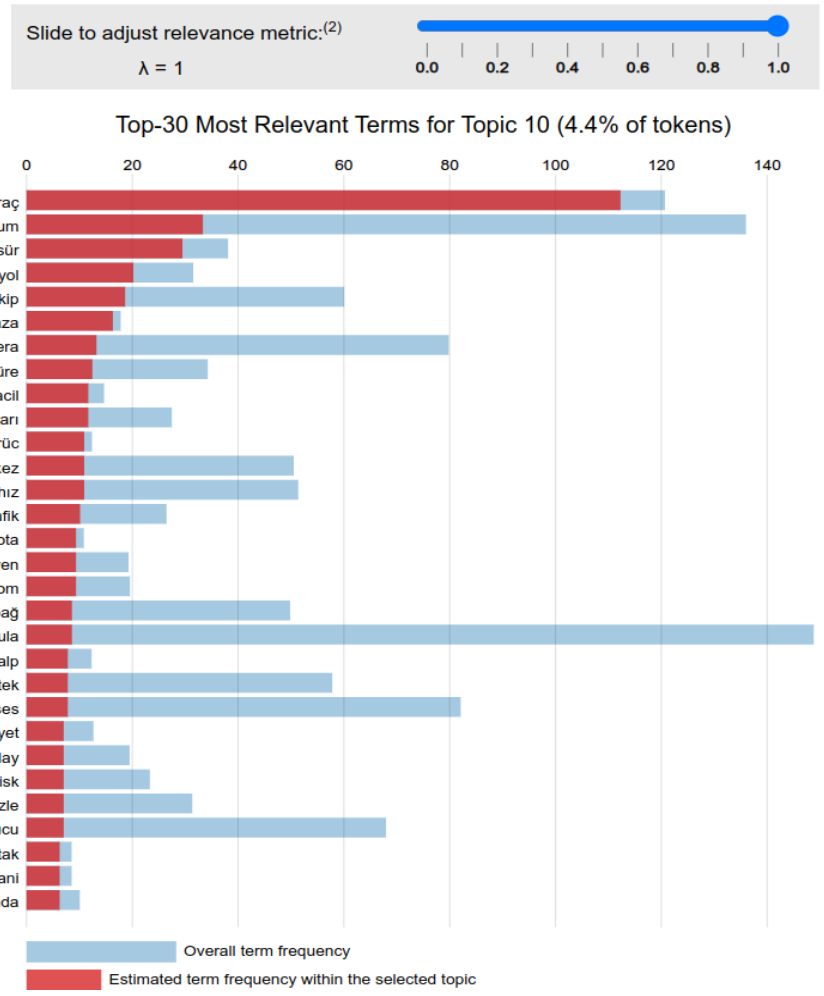
TÜRK PATENT
TÜRK PATENT VE MARKA KURUMU



# THE CURRENT STATE OF THE AI-BASED PATENTS IN TÜRKİYE

**The topic:**
**traffic control systems**



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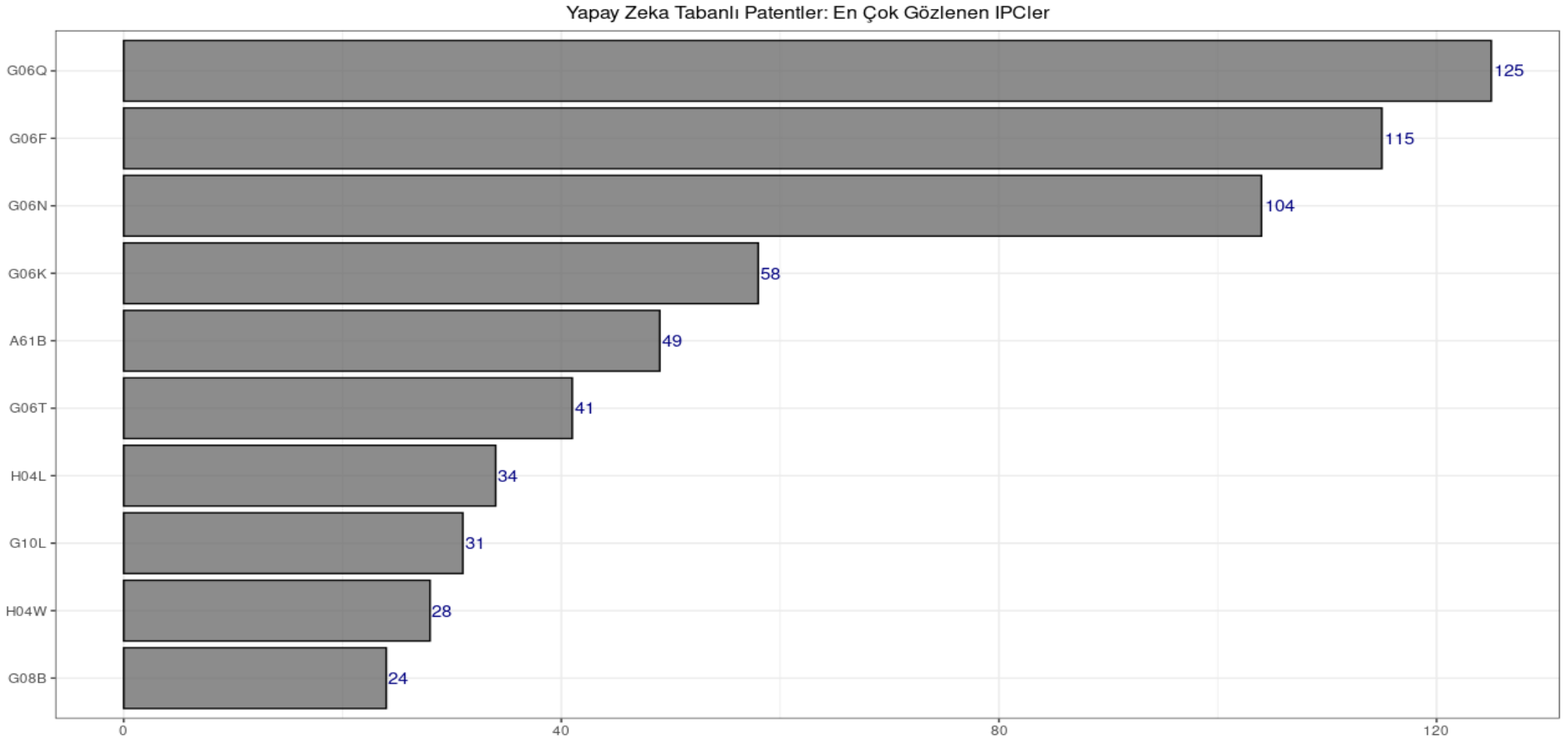


**Figure: IPC subclass distribution of the dataset. Each subclass is counted if an application contains multiple IPC subclasses.**