

: An Artificial Intelligence, Temporal Data Mining and Modelling Approach for Monitoring, Exploring and Analysing Continuous Data, Timeliness, Data Availability and Distribution Process

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The International Data Centre (IDC) receives from stations more than ten gigabytes of raw data on a daily basis. Most of those data are collected and transmitted as continuous data digitally signed frames. In normal operations the frames are received in chronological order of their acquisition/detection time. However, some frames may be missed, corrupted, partially delivered or sent several times. It is vital to Treaty verification to receive the data in a timely manner and that it is complete. In this paper we propose an artificial intelligence, temporal data mining and modelling approach for monitoring, exploring and analysing continuous data. The proposed temporal continuous data model is designed using a well defined knowledge based system and inference engine. Also, with the proposed approach by mining the temporal data contained in the concise list of frames, we can easily calculate, in an hourly basis or less, the timeliness, data availability and completeness of the received data. In addition, it will enable us to discover hidden patterns, evaluate receiving and forwarding processes, assess the station operation as well as generating distribution performance indicator metrics. The generated results and metrics can be fed to big data tools (e.g. Elasticsearch) as well as using open source dashboards for data presentation.

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Promotional text

The use of artificial intelligence tools, temporal data mining and modelling for monitoring, exploring and analysing continuous data, timeliness, data availability, discover hidden patterns, evaluate receiving and forwarding processes and assess the station operations.

Oral preference format

in-person

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