Time Series Builder user guide

> (i) Tool allowing to create time series based on given Time Vector and Number Vector of values correlated with time. The resulting Time Series can be used in Correlation Analysis applications.
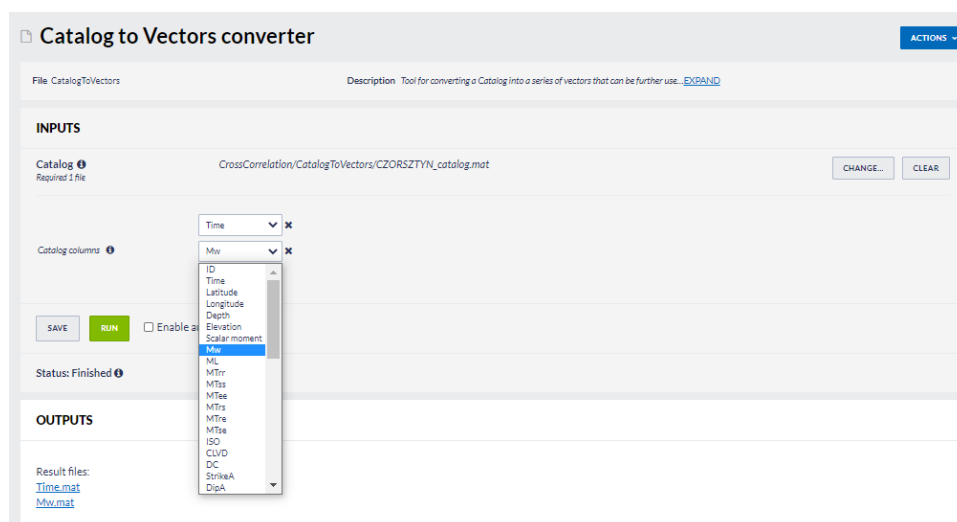>
> open in ⓢ IS-EPOS PLATFORM

Step by Step

The time series data can be easily created with tools available on the EPISODES Platform, as escribed below:

1. Choose a catalog (or extract part of the catalog with **Catalog Filter**) from a selected episode.

2. Add to user's workspace the **Catalog to Vector converter** application. It allows to extract vectors of time and time–correlated attributes of user's choice from the seismic catalog.
Select the seismic catalog to be used and choose the parameters to be analyzed: a column with time and any parameter from the Catalog for which the correlation is to be made (Time and eg. Mw).

3. The application generates two files: Time.mat and [chosen parameter name].mat. These are input files to the Time Series Builder application that user should to use next.
4. Add the **Time Series Builder** to the workspace. This application allows the user to generate data series based on time vector and time-correlated parameter vector files created in the previous step.

In the following steps the user needs to specify:

- *Initial time range* – initial time range for analysis
- *Calculation mode* – specifies way of parameter calculation from the time-correlated parameter vector values to compute time series (see figure below)

- *Time step* - time step used for the analysis (see figure below)

- *Chosen time series* – select a single or multiple range(s) of time for which time series will be calculated. It can be typed manually or selected from interactive graphs (see figures below)

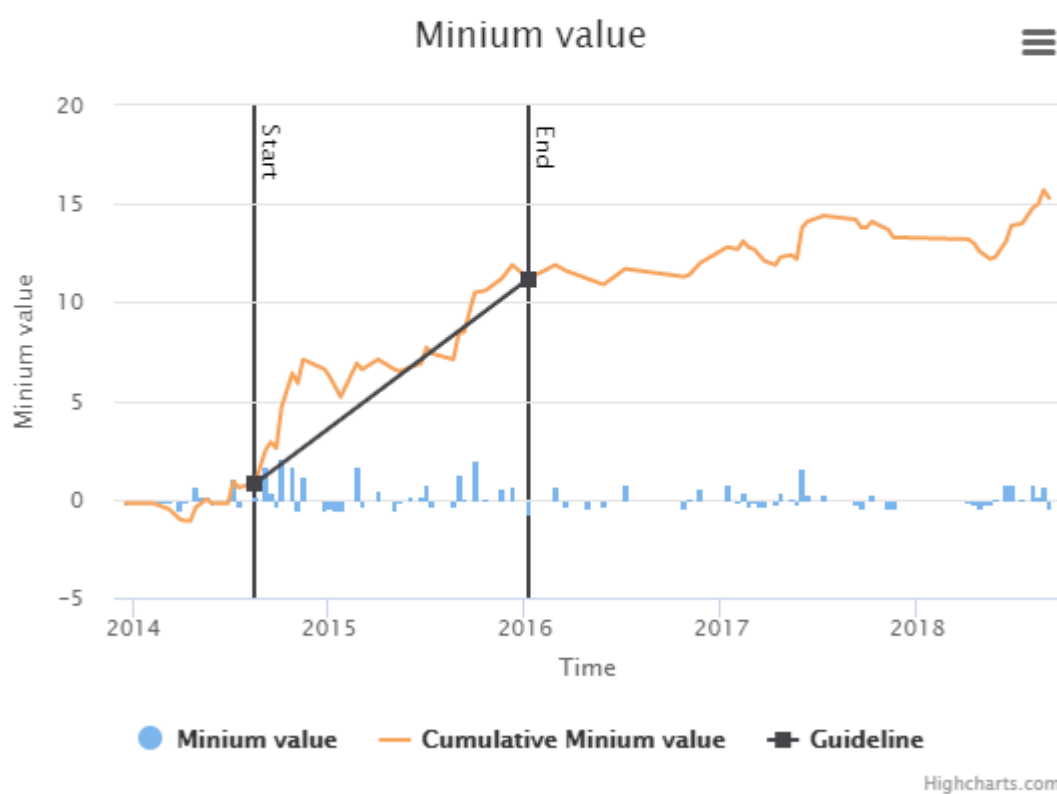|	2014 Mar 04	2014 Aug 31	CHOOSE FROM PLOT	✖
Chosen time series:	2013 Dec 10	2018 Sep 11	CHOOSE FROM PLOT	✖

ADD

Minium value plot ✖

Choose time values by clicking on the points in the plot.
Chosen start value: 2014 Aug 15 08:07:55 ✖
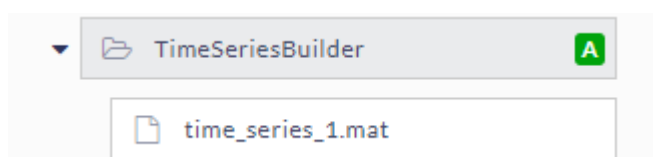Chosen end value: 2016 Jan 07 08:07:55 ✖

Minium value

● Minium value —— Cumulative Minium value ▪—▪ Guideline

Highcharts.com

OK   CANCEL

RUN

4. Press the button to initiate the process. Time series are calculated and saved in the user's workspace as .mat file.

▼ 📂 TimeSeriesBuilder **A**

📄 time_series_1.mat

The time series data is the mandatory input for the following applications:

- Autocorrelation
- Cross Correlation
- Coefficient of Radomness
- Priestley-Subba Rao (PSR) test

Back to top

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