

# 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

## CATEGORY Converters

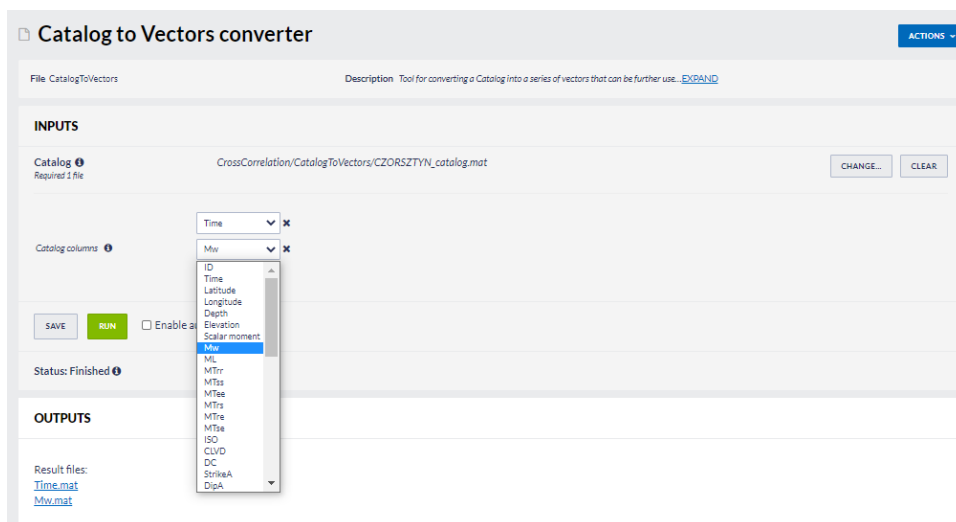
**KEYWORDS** Data selection, Data filtering, Data reshaping, Data conversion

**CITATION** Please acknowledge use of this application in your work: IS-EPOS. (2019). *Data Handling Applications* [Web applications]. . Retrieved from <https://tcs.ah-epos.eu/>

## 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.

**Time Series builder**

File: TimeSeriesBuilder Description: Tool allowing to create time series based on given Time Vector and Real nu... [EXPAND](#)

**INPUTS**

Time Vector ⓘ CrossCorrelation/CatalogToVectors/Time.mat [CHANGE...](#)

Real number vector ⓘ CrossCorrelation/CatalogToVectors/Mw.mat [CHANGE...](#)

Initial time range: 2018 Jan 01 2018 Dec 31

Calculation mode ⓘ: Minimum value

Time step: 1 Days

Chosen time series: 2018 Jan 01 2018 Dec 31 [CHOOSE FROM PLOT](#)

[SAVE](#) [RUN](#) ☐ Enable autorun

Status: Finished ⓘ

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)

Initial time range: 2018 Jan 01 2018 Dec 31

Calculation mode ⓘ: Minimum value

Time step: 1 Days

Chosen time series: 2018 Jan 01 2018 Dec 31 [CHOOSE FROM PLOT](#)

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

Initial time range: 2018 Jan 01 2018 Dec 31

Calculation mode ⓘ: Minimum value

Time step: 1 Days

Chosen time series: 2018 Jan 01 Dec 31 [CHOOSE FROM PLOT](#)

- *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)

Chosen time series:

|             |             |                    |
|-------------|-------------|--------------------|
| 2014 Mar 04 | 2014 Aug 31 | CHOOSE FROM PLOT ✕ |
| 2013 Dec 10 | 2018 Sep 11 | CHOOSE FROM PLOT ✕ |

ADD

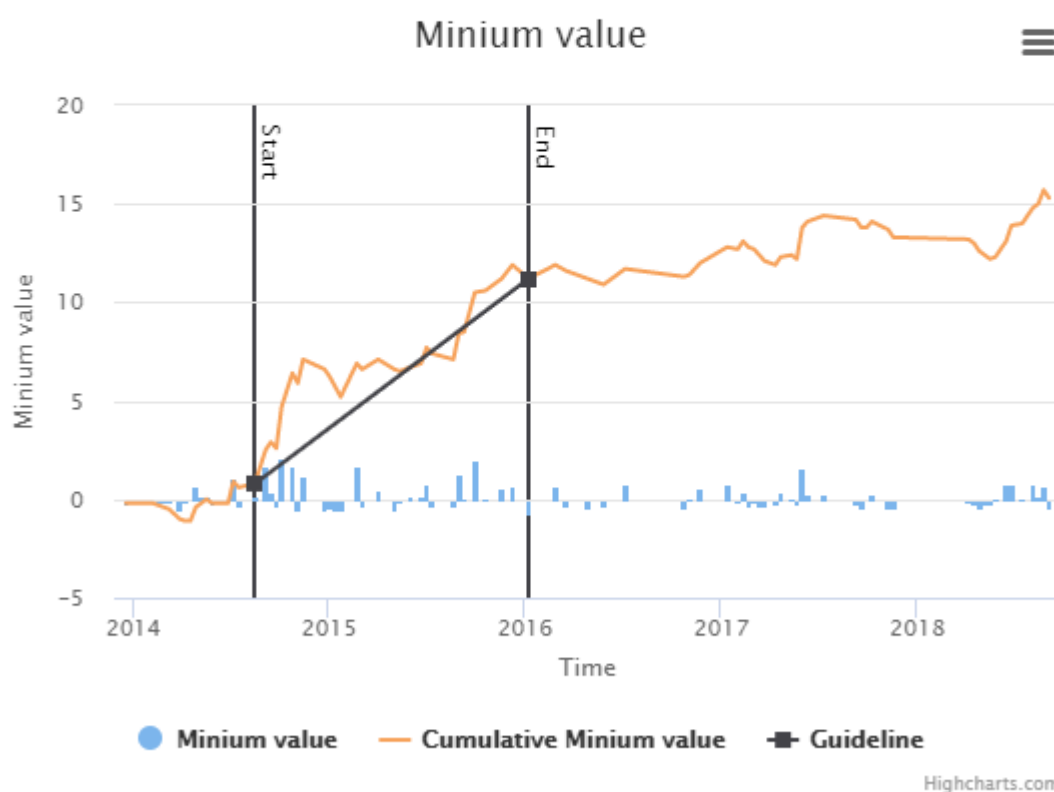
## Minium value plot



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 ✕

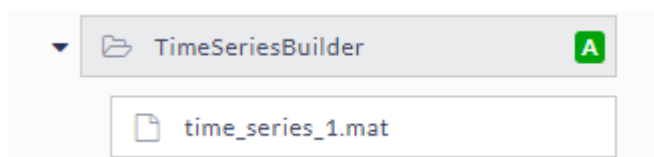


OK

CANCEL

RUN

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



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

- [Autocorrelation](#)
- [Cross Correlation](#)
- [Coefficient of Radomness](#)
- [Priestley-Subba Rao \(PSR\) test](#)

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