

# Synergetic Navigation System (SNS)

The Synergetic Navigation System (SNS) is a highly flexible and generic internet-based system for data acquisition, time-series analysis, and visualization of outcome and process data as well as analysis results. It allows for the implementation of various questionnaires or coding systems. Data can be entered and results can be checked by most web-compatible devices, including PCs, notebooks, tablets, or smartphones (ubiquitous computing).

The sampling rate of the data acquisition (time sampling, event sampling) is up to free choice (e.g., pre-post, weekly, session-related, once per day, higher frequencies). Using the questionnaire editor of the SNS, outcome or personal process questionnaires can be created. Comment fields for text entry and scales for quantitative measures can be combined. Global indicators of change processes can be defined by a “traffic lights” editor. The system does not expect standard tracks.

Outcomes are visualized by histograms, and processes are visualized by time-series graphs. Different sizes and alignments of the diagrams can be chosen. If necessary, all diagram fields can be configured independently. The selected item configurations can be saved. When selected again subsequently, the changes automatically are activated and show the current stage of a client’s development. When the cursor is moved over the graph of a time series, it displays the value, the entry date, and the diary entry of each data point.

The available analysis and visualization tools:

- Visualization of time series
- Superposition if time series (even if the time series are only partially overlapping or were recorded with different sampling rates, e.g., once per day and once per session)
- Color coded visualization of the values of one or many time series in a diagram
- Calculation of the dynamic complexity in a running window
- Color coded visualization of the synchronized dynamic complexities of many time series (Complexity Resonance Diagram)
- Dynamic correlation pattern analysis
- Colored Recurrence Plots

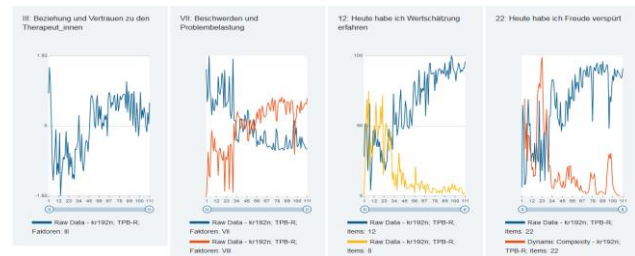
A further option is to assess interpersonal relations by a dynamic interaction matrix tool for dyads (e.g., in couples therapy), families, groups, teams, or organizations.

[www.ccsys.de](http://www.ccsys.de)

## Diagramm-Assistent



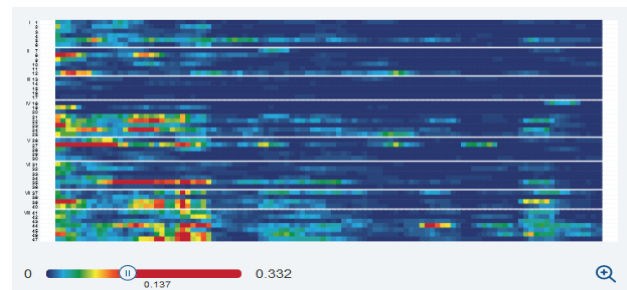
Options for the configuration of results



Time series charts



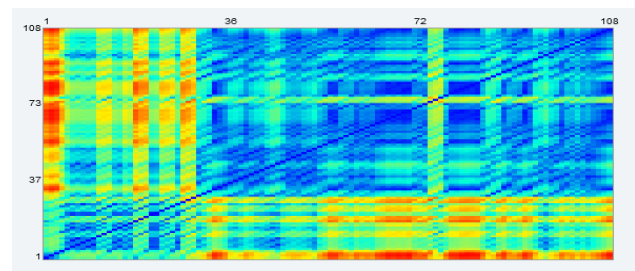
Color-coded raw data diagram of multiple time series



Complexity Resonance Diagram



Snapshots of moving correlation matrices



Color-coded Recurrence Plot