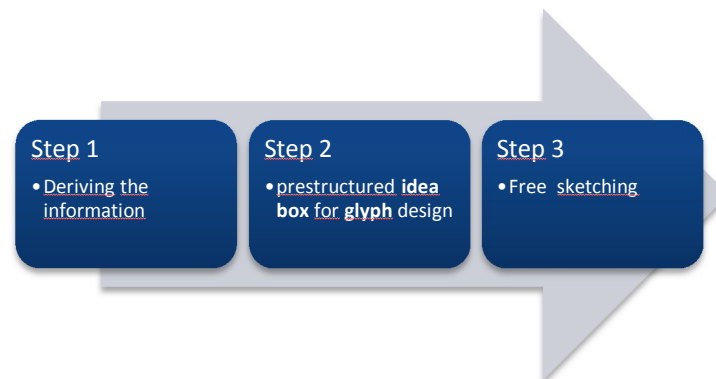


# Konect – Instruction Card

---

The Konect method offers three basic steps:



### *Step 1: Deriving information*

In the first step, the information to be shown on the HMI has to be derived systematically in a first step. For this, well-established methods as task analysis or ecological interface design exist. For this, also Tools are existent (e.g. HAMSTERS).

### *Step 2: Prestructured idea boxes for glyph design*

The information has now to be visualized. For this, the second step of the Konect offers some help and guidance in form of the idea box. The idea box is a core concept of Konect that aims at fostering creativity of the designer by opening up a design space and showing possibilities of visualizing the information at hand with different visual attributes. The idea box contains the following information:

**Importance:** The importance of the information element is described as a value between 0 and 1 with 1 representing the highest importance. The information elements are already sorted in the idea box from the most important information element at the top to the least important one at the bottom of the box.

**Information:** In this column the information element is named.

**Insight:** In the third column the insight the human operator wants to have when looking at the information is described (e.g. perceive if value is ok fast). In this regard, one has to keep in mind that one information element can appear twice in the idea box e.g. a speed value with insight to perceive it as quantitative value and speed with insight to perceive if it is ok or not.

**Efficiency ranking:** Based on the insight, the fourth column (Efficiency ranking) lists the most appropriate visual attributes according to an efficiency ranking. The most efficient attribute with regard to time and correctness of the percept is at the top of the list (ranked with (1)). Possible visual attributes are exemplarily shown in Figure 1.

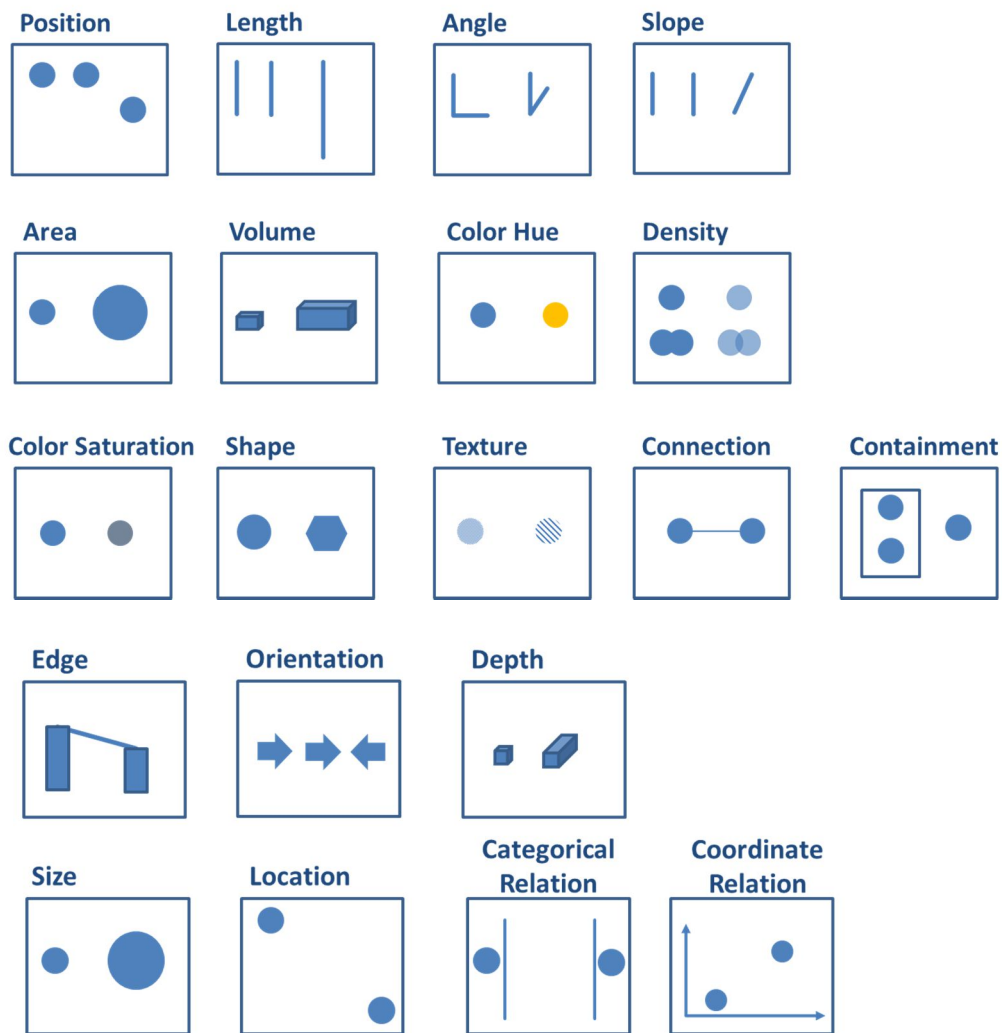


Figure 1: Visual Attributes.

**Combination:** All information elements listed in one box should be combined in one glyph. A glyph combines different visual attributes in one integrated form as for instance shown in Figure 2. In this form different lengths (e.g. the lines) are combined in one symmetric shape (circle) which can additionally have a color (red) in case one value is not ok. To combine the chosen visual attributes in one form the Gestalt laws offer help. These are shown in 4 and listed in the last column of the idea box.

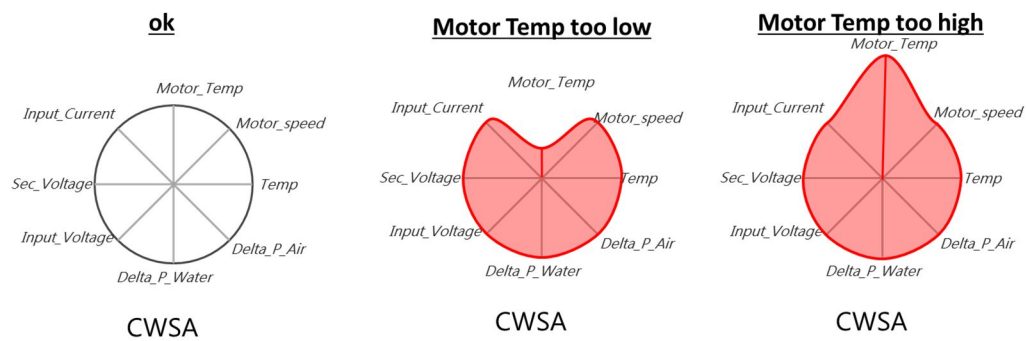


Figure 2: Example for a glyph.

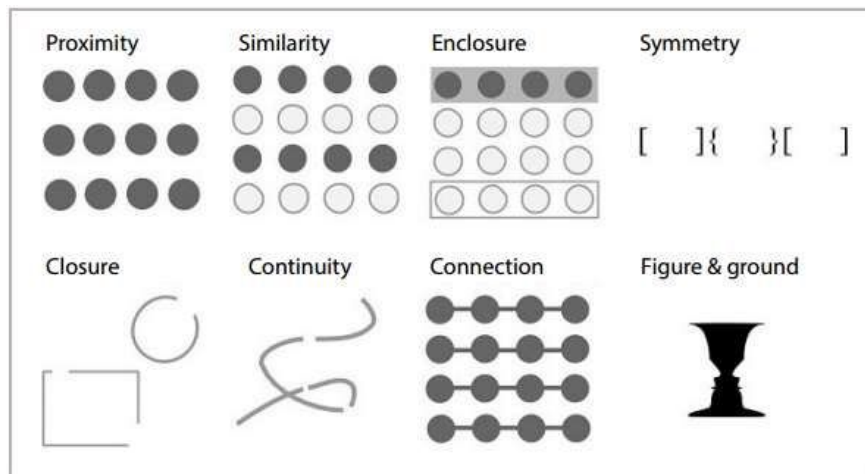


Figure 4: Gestalt laws.

































## Step 3: Working with the idea boxes to derive a sketch

The third step is the free sketching step. You can now work with the predefined idea boxes to create a sketch for one screen. You should create one glyph for each idea box on the screen. You should now work as follows with the idea box:

1. Choose the most efficient visual attribute for each information in the box for the sketch.
2. Combine all visual attributes chosen in one glyph with the help of the combination column (gestalt laws).
  - a. Sometimes it might be difficult to combine all visual attributes in one integrated form. In this case the importance ranking offers help: If not the most effective visual attribute for each information element can be integrated in one glyph, try to choose the most effective visual attribute for the most important information and use less efficient attributes for less important information elements.

In the first part you designed a sketch with 3 glyphs. Please rework your design now according to the following steps:

1. Establish **consistency throughout the glyphs**. For this you get lists in which all information elements are grouped according to the insights.
  - a. Mark all visual attributes used in your sketch in the lists.
  - b. For each element in the insight list, try to use the same visual attribute. Mind for this: You should avoid exchanging a high ranked visual attribute for an important information with a lower ranked visual attribute. In the other direction you can apply changes (e.g. using a higher ranked visual attribute for a less important information to reach a more consistent overall form).
  - c. Try to use a similar characteristic for the same visual attribute (e.g. if green is an indicator for “ok” use green for this throughout the whole sketch).
2. Establish **simplicity for all visual structures and forms in your sketch**:
  - a. Look at all structural forms (e.g. shapes) on your sketch. This might be forms that belong to the glyphs, structure the glyphs but also elements that you used to structure your whole sketch.
  - b. Rotate each structural form in 90° steps and reflect them on a horizontal, vertical and diagonal axes (see Figure below).
  - c. Count the number of different appearances of the form. A small number implies that the structural form is faster to perceive.
  - d. Try to use simple forms (with a low counted number as described before). Mind that you are doing a trade-off here between fast perception of the form and intuitive understanding of the visualization.
  - e. Reduce all colors that do not carry information.

0°	90°	180°	270°	Horizontal reflect	Vertical reflect	Diagonal reflect	Diagonal reflect	Count
								1
								2
								4
								8