open orienteering Mapper

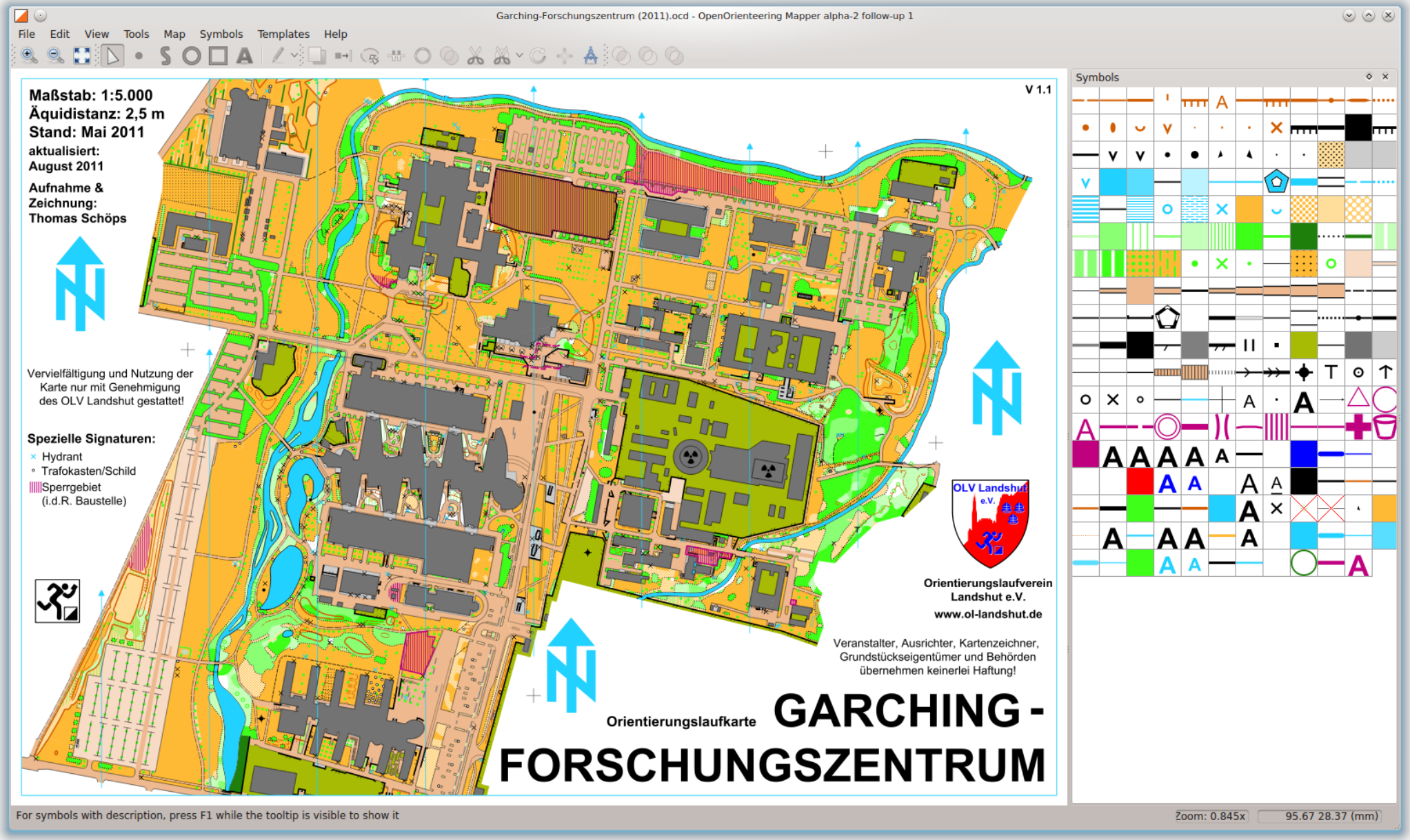
Mapmaking: first steps for beginners

www.openorienteering.org

What is OO Mapper?

- **Free**, *open source* alternative for drawing orienteering maps
- All basic functions for **drawing** maps are supported
- Exchange of maps is possible in OCD 8 format
- No direct support for course setting, however possible via other programs after map export

Example map in OO Mapper



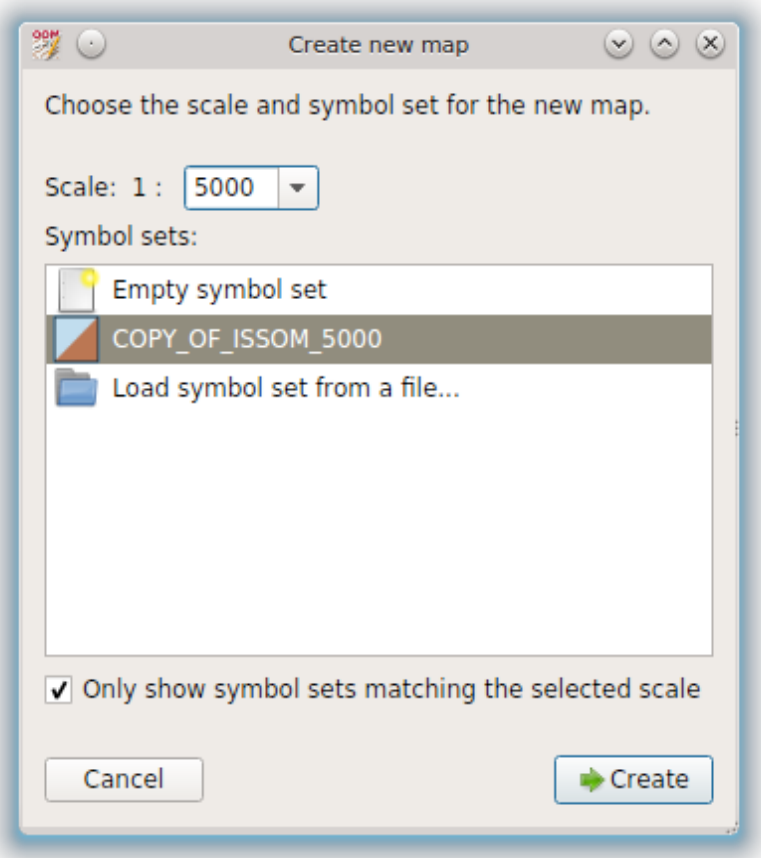
Steps for drawing a new map

- **Creating the map**
- Loading templates
- Drawing
- Finishing the map
- Export for course setting

Creating a new map

- Start program
- New map ...

Creating a new map



- **Choose** scale and suited **symbol set**
  - ISSOM: 1:4000 or 1:5000
  - ISOM: 1:10.000 or 1:15.000

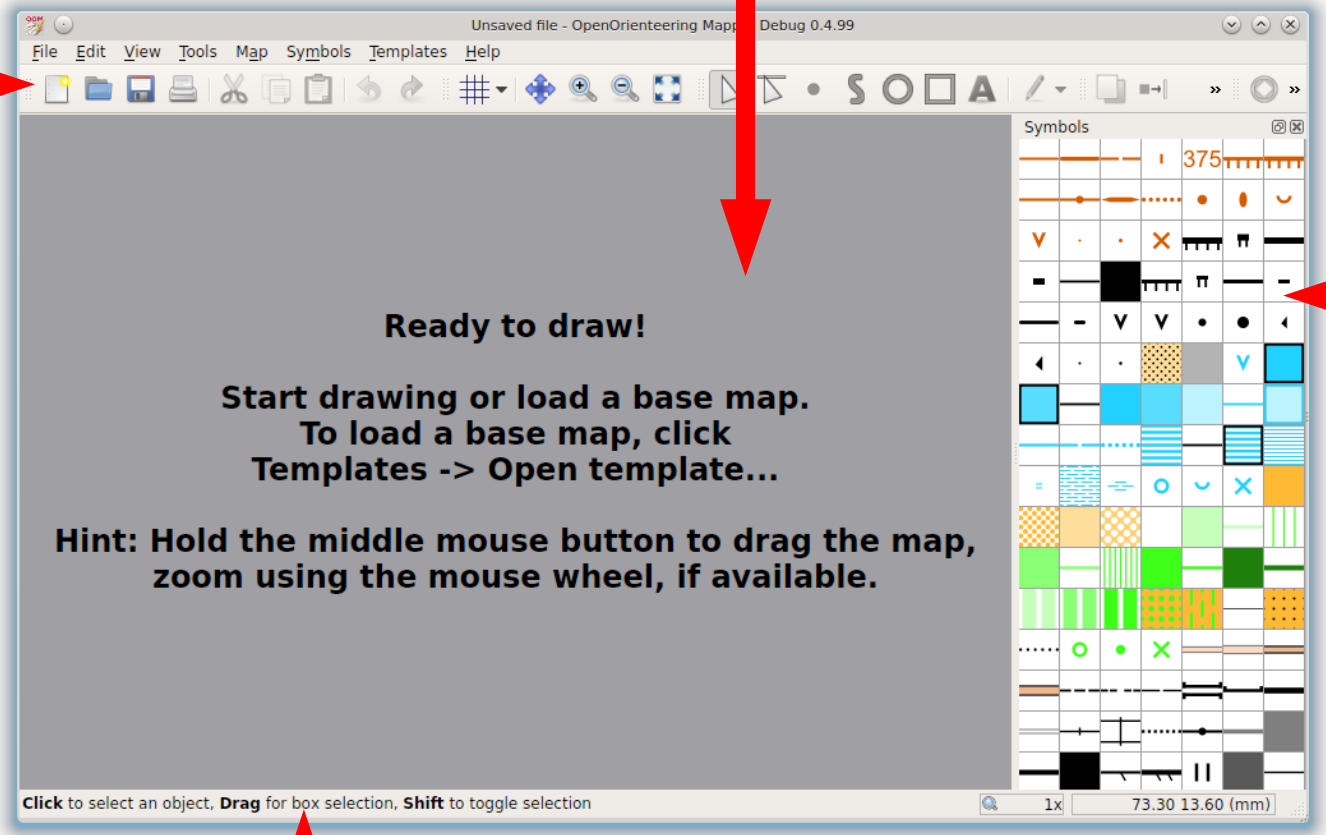
Want to use a different scale?

- **Attention:** check in competition rules / map norm if scale is permitted
- For setting a different scale:
  - Either enter it directly in the new map dialog and uncheck “only show matching symbol sets for the selected scale”
  - Or after creating the map in a standard scale select *Map* -> *Change scale...*

The map drawing screen

Drawing tools

Drawing area



Symbols

Hints about the current drawing tool

Steps for drawing a new map

- Creating the map
- **Loading templates**
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Types of templates

- Everything which is available (and legally okay)!
  The better the templates, the less work.
  - Aerial photos (Orthophotos)
  - Topographic maps - for contours
  - Land register map - for building outlines
  - Laserscanning data - for contours / vegetation
  - OpenStreetMap data
  - own GPS tracks
  - ...

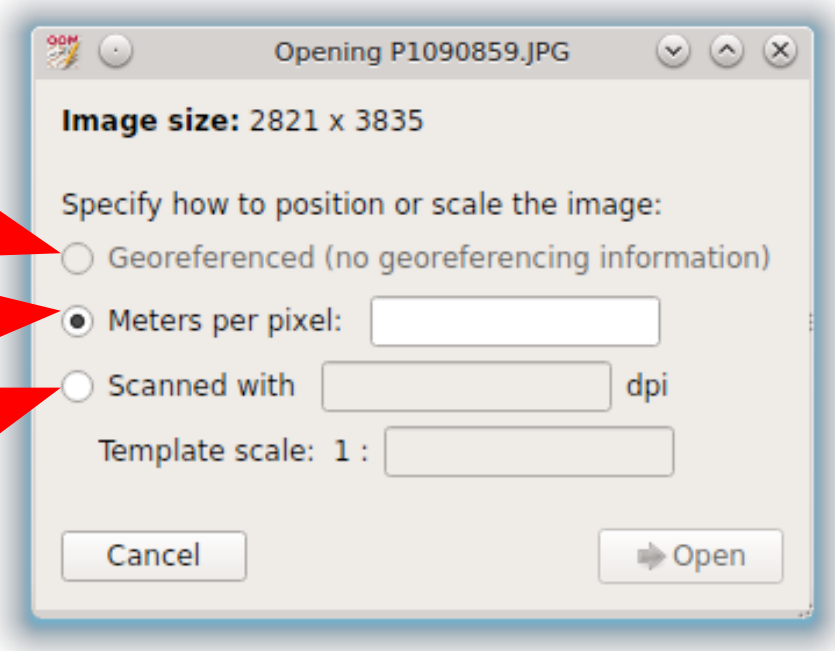
Loading templates

- *Templates -> Open template...* and choose template file
- Further steps depend on the type of template, e.g. for images: choice of positioning

If image is georeferenced:
automatic positioning

For digital templates:
meter per pixel

For scanned templates:
DPI and scale



Positioning of templates

- **If loaded as georeferenced: set up georeferencing**
- Otherwise the template must be positioned manually
  - For 1st template: align with magnetic north direction
  - For further templates: align with existing templates

Georeferencing

- Georeferencing = putting the map into a geographic **reference system** (e.g. UTM, Gauss-Krüger)
- Enables to convert coordinates between the map and geographic system
- Useful e.g. for loading georeferenced **templates**
  - GPS tracks
  - Georeferenced aerial photos
- After doing this for the first template, all further templates will be positioned correctly automatically
- Can be **omitted** in case there are no georeferenced templates

Setting up the georeferencing

- The best way is to start by loading a georeferenced template. This will show the georeferencing dialog with the reference point fields pre-filled with values fitting to your data.
- To show the dialog directly: *Map -> Georeferencing...*

1. Choose reference system

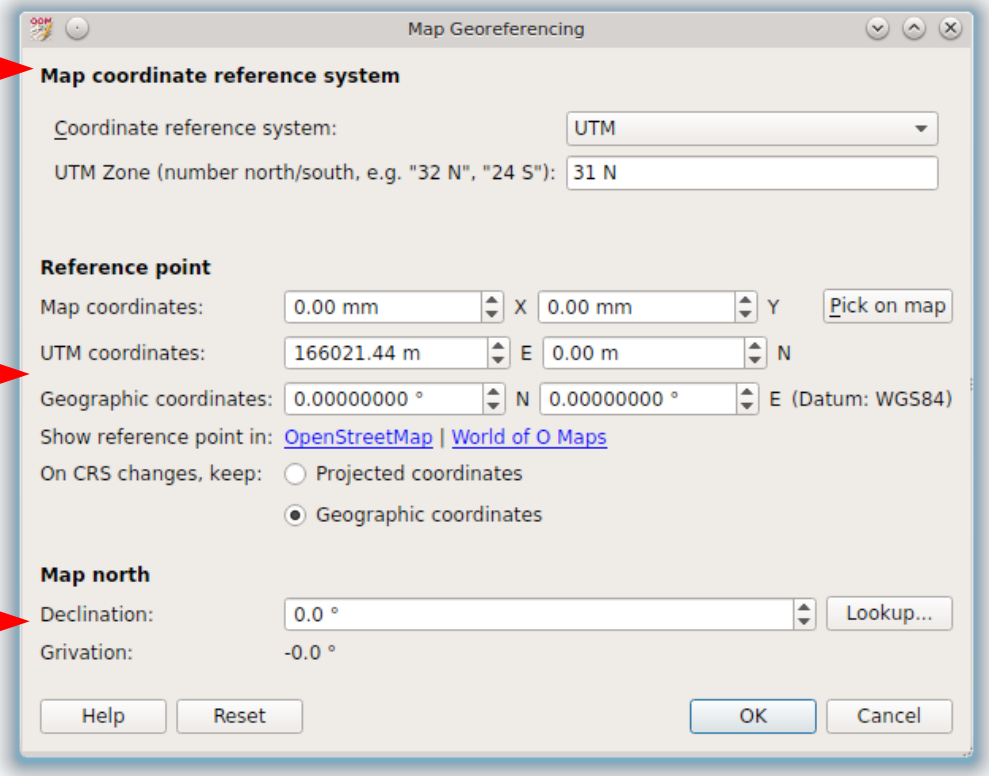
Get information about the system from the source of your georeferenced files; for just loading GPS tracks, simply choose UTM.

2. Enter reference point

If the dialog is triggered by loading a template, nothing to do here.

3. Enter declination

Online lookup possible; should be checked in the terrain however as there can be deviations.



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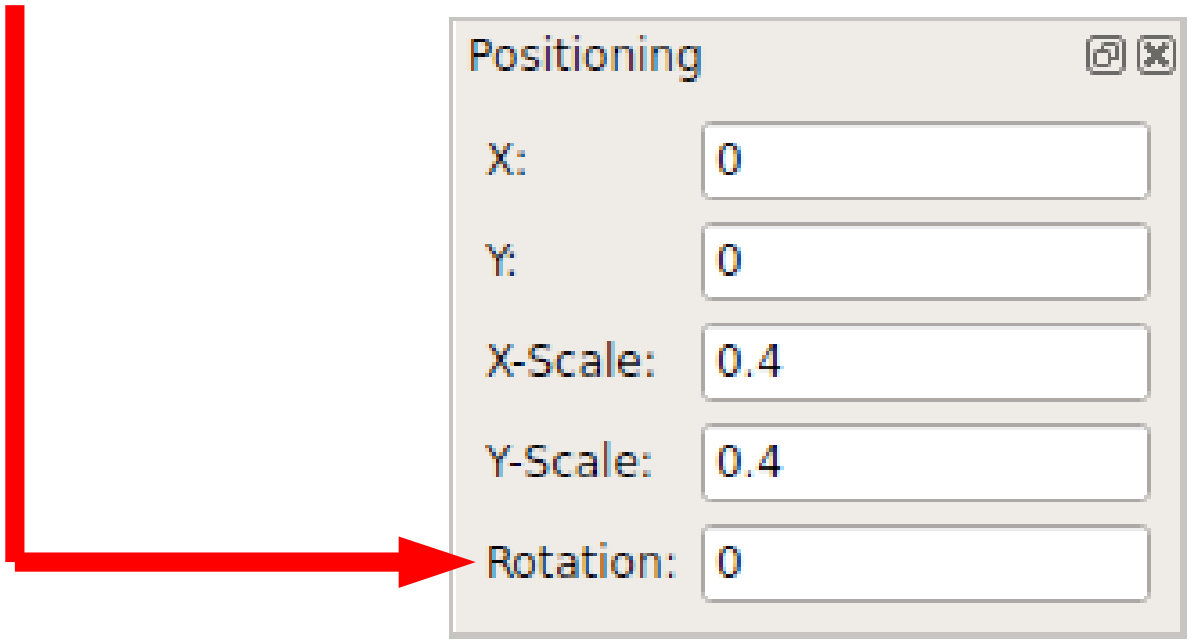
Aligning with magnetic north direction

- *Templates -> Template setup window...*
- Choose template in list
- Click *Positioning...*
- Enter angle to cancel out declination (e.g. from online service; see slide about georeferencing)

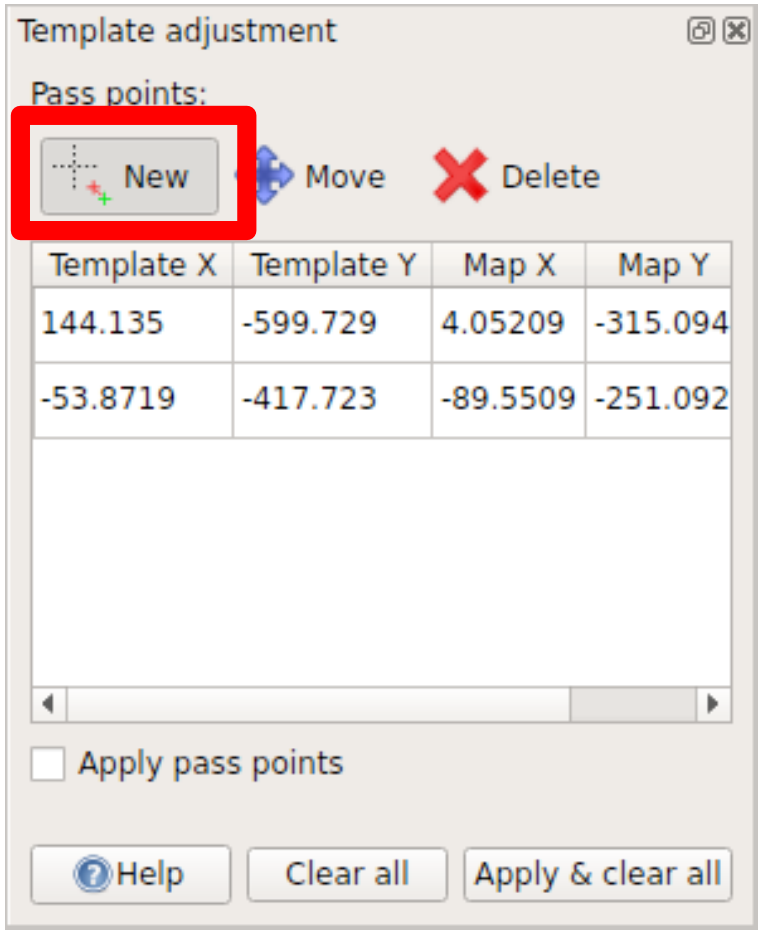


Positioning of templates

- If loaded as georeferenced: set up georeferencing
- Otherwise the template must be positioned manually
  - For 1st template: align with magnetic north direction
  - **For further templates: align with existing templates**

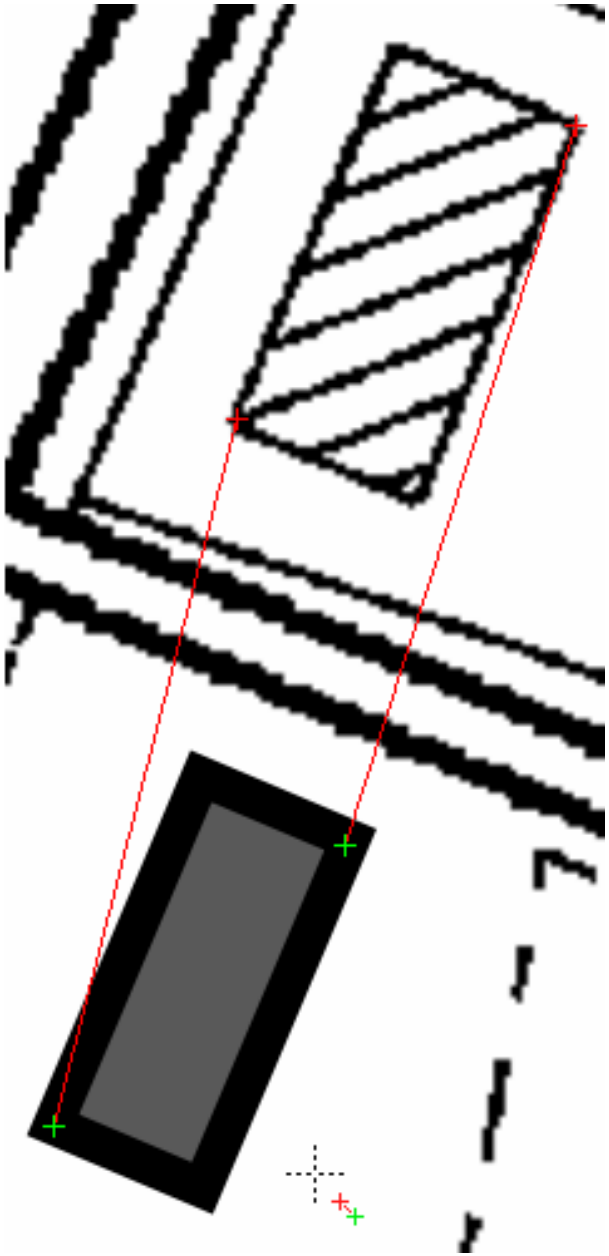
Aligning templates

- *Templates -> Template setup window...*
- Choose template in list
- Click *Adjust...*
- Click “New” and then alternatingly on a point on the new template and on the corresponding point on the existing map
- Create at least two pass points this way
- Click “Apply pass points”



Aligning templates (2)

- An example is on the right
- Normally: the more points,
  the more exact the result will be
- If possible points should be
  chosen on the outer region
  at different sides of the template
  (not just on a single house like
  in the example!)



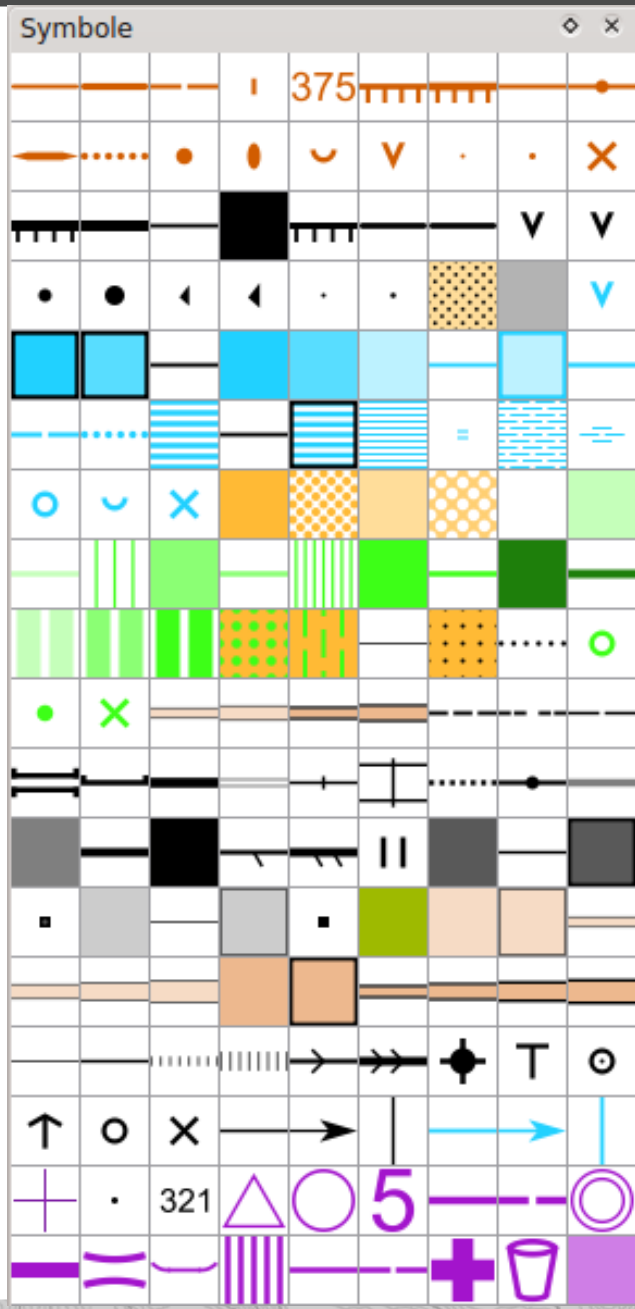
Steps for drawing a new map

- Creating the map
- Loading templates
- **Drawing**
- Finishing the map
- Export for course setting

Symbols

- **Types** of symbols:
  - Point symbols
  - Line symbols
  - Area symbols
  - Text symbols
  - Combined symbols

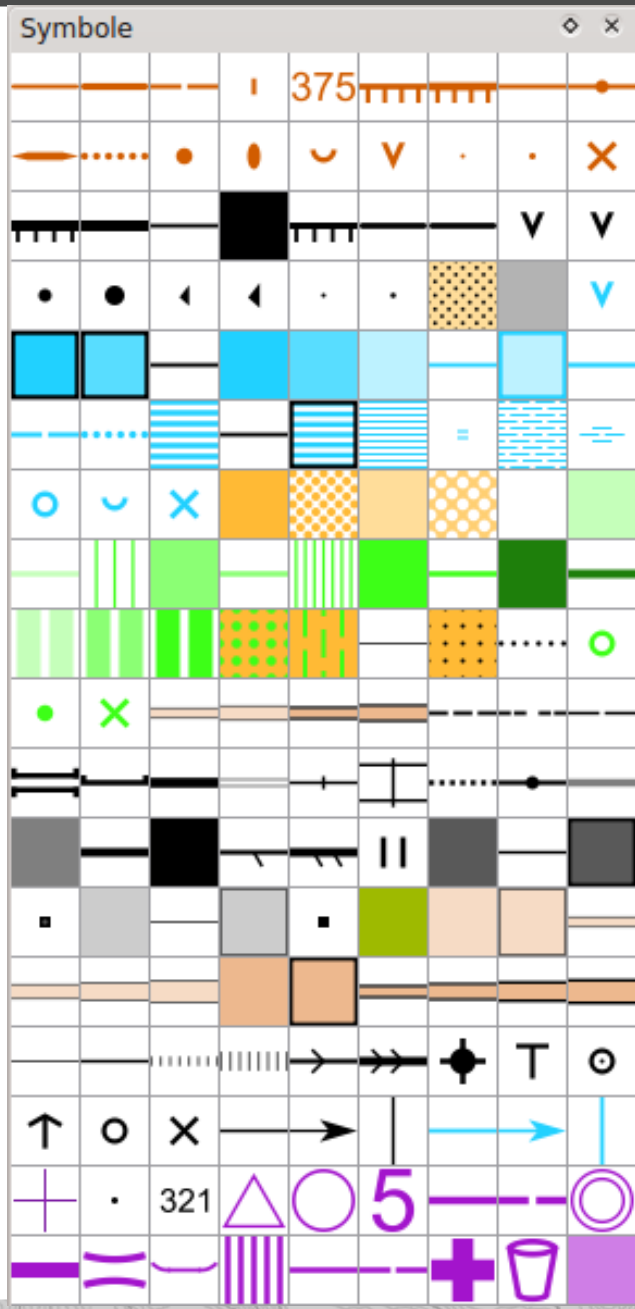
- Defined by the symbol set, thus normally **should not be changed anymore!**
- **Exception:** Map labels, logos, etc.



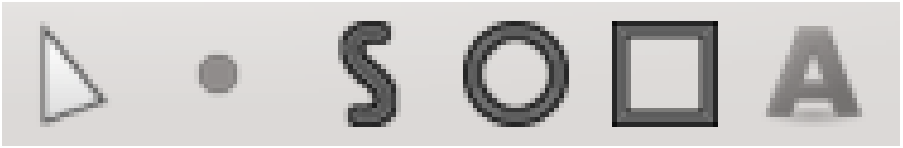
Symbols

- Recommendation: to get to know the exact definition of the map symbols, read **ISOM or ISSOM document** once (i.e. orienteering map standards, see www.orienteering.org)

- In Mapper: **pointing at** a symbol with the cursor and **pressing F1** shows the description text for this symbol from the map standard



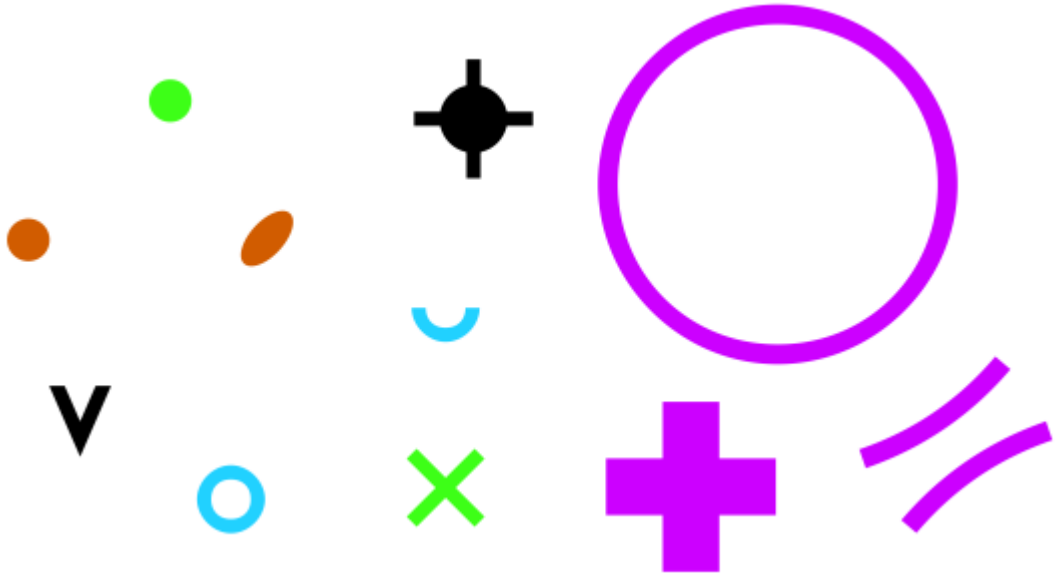
Drawing tools



- From left to right:
  - Editing tool
  - Draw points
  - Draw straight and curved lines and areas
  - Draw circles and ellipses
  - Draw rectangular lines and areas
  - Write text

Draw points

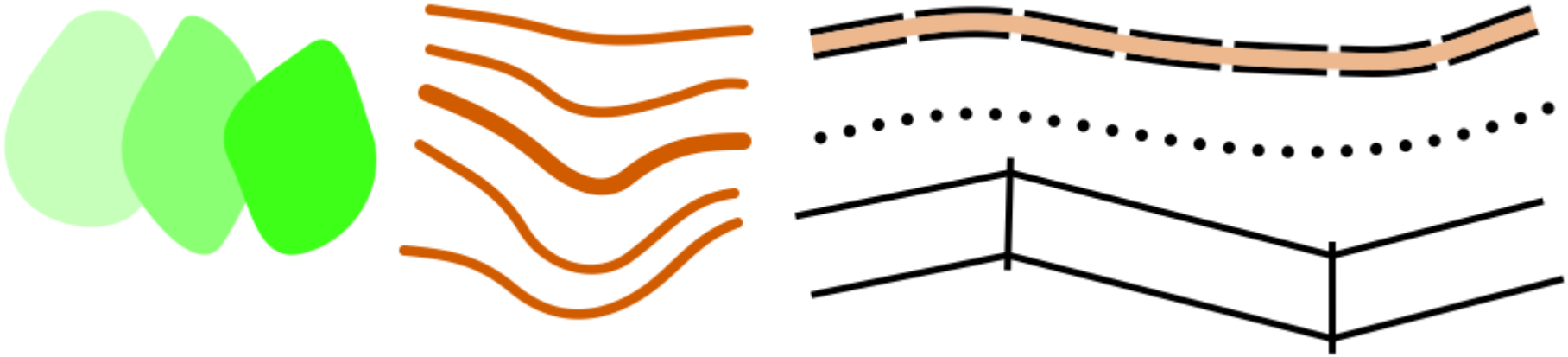
- **Click**: Set a point object
- **Click and drag**: Set a point and specify its direction



Draw lines and areas

- **Click**: Set corner point
- **Click and drag**: Set curve point and specify tangent direction
- **Right click**: set last point

- Hold Ctrl: constrain angles
- Hold Shift: Trace existing objects
- More: see hints in the status bar at the bottom



Edit objects

- **Click**: Select object. Click multiple times to toggle between multiple objects at the same spot.

- With object selected:
  - **Click and drag** at border: move object
  - **Click and drag** at object point: move point
  - Press **Del**: delete object
- More: see hints in the status bar at the bottom

More tools

- Just try them out!
  - Rotate and scale objects
  - Cut objects
  - Merge areas
  - Change dash direction
  - View modes (F2 / F3 keys)
  - Measure lengths
  - ...
- **Hints** about the controls are in the **status bar** at the bottom of the program window.

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Finishing the map

- Is all important information on the map?
  - North lines
  - Map frame
  - Scale, equidistance, standing
  - Author
  - Club logo
  - Usage information / liability
  - Legend
    - Best to copy it from an existing map and adapt it

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Export for course setting

- **Course setting via OCD file**
  - Export map as OCD and load as template as usual
- **Course setting via image file**
  - *File-> Export... -> Image*
  - Choose high resolution, e.g. 600 dpi
  - Export and save as PNG for example
    - **Do not use JPG for images with many homogeneous areas and sharp edges (like o-maps).**
  - Load map image in course setting program with chosen resolution and map scale

More information

- **Wiki with program documentation:**
  https://sourceforge.net/p/oorienteering/wiki/
- **Forum** for questions:
  http://sourceforge.net/p/oorienteering/discussion/
- **Bugtracker** for bugs or feature requests:
  http://sourceforge.net/p/oorienteering/tickets/
- **Blog** with the latest news:
  www.openorienteering.org