

# The nowcasting tool

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Sometimes you wish to make an accurate timing of a meteorological event. For example you want to know at what time an area of low clouds will arrive at Amsterdam Schiphol airport. A line of convergence develops over the southwest part of your forecast area; what will be its position at 12 UTC? Or an area with active showers; when are they expected to reach your area of interest? You can of course take a look at your model, but as we all know sometimes they miss events or things are not calculated at the right place or time. For aiding forecasting in these cases, the nowcasting tool was developed.

## Functionality

The basis of the nowcasting tool is the map from Google Maps, with the tool working in the same way as on the internet (see figure 1). At the right side of the window you can choose one or more overlays (checkboxes) to display on the map. The position of observation stations, airports and platforms and the FIR-boundaries are available. Furthermore you can display satellite images, 15 minute images of the last three hours can be chosen. When the associated checkbox is checked buttons will appear to navigate through the images. The images shown are from METEOSAT10 and are a combination of the high resolution visible channel during daylight and another combination of channels during nighthours in which low cloud and fog are well visible. Finally radar images can be displayed. This is also a loop of the last three hours, in this case 5 minute images. When checked a timetable will appear to choose the image you want.

Now how do we make a timing of some event? For this we have to draw a line or a closed area in the map using the buttons at the centre-top of the map. After this we must choose the values of a couple of parameters in the box at the top right of the window. A speed and wind direction for the displacement of the line or area must be filled out. Furthermore the length of the forecast loop (in hours) and the start time of the loop must be chosen. Finally press the 'go' button and at the right side of the window a timetable appears (see figure 2). If you mouseover

▶ *At the top - Figure 1: start window of the nowcasting tool.*

▶ *In the middle - Figure 2: example of the timing of low cloud present over the North Sea, moving south. The red dotted line is the line drawn, the blue one is the forecasted position at 13:00 UTC. Airports and platforms are also shown.*

▶ *Below - Figure 3: window for composing a SIGMET.*

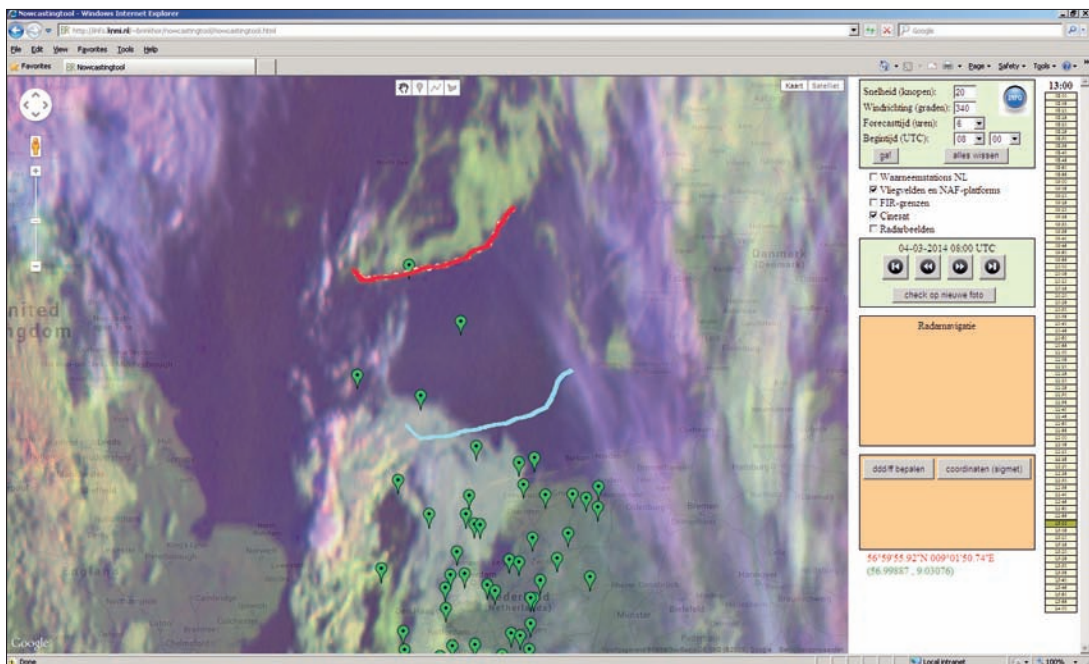
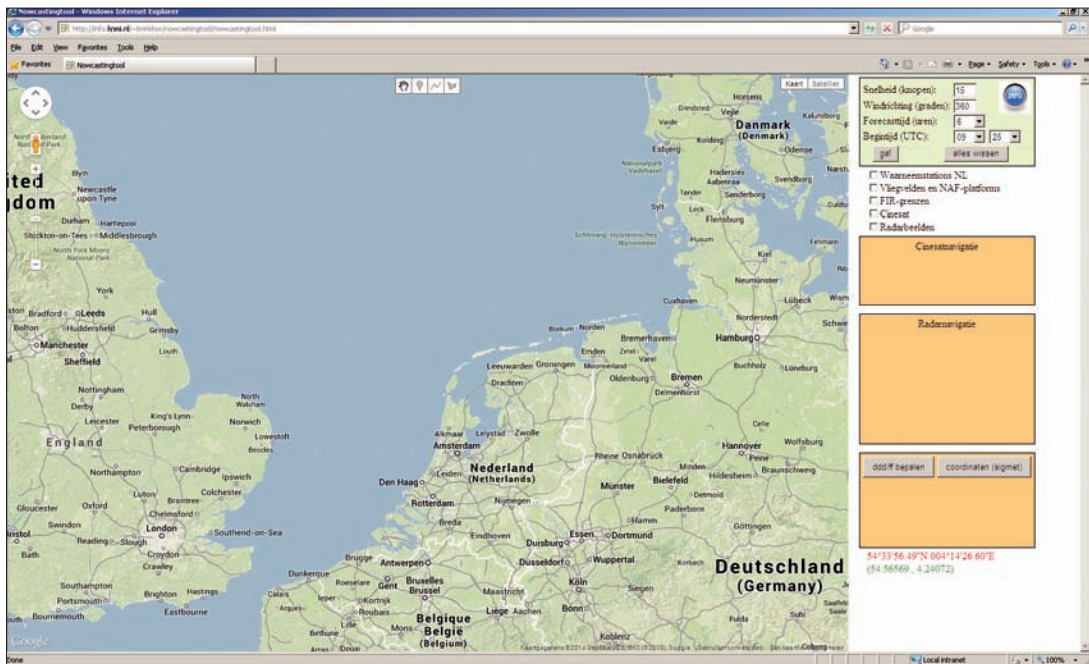
this timetable you can see where the line or area is expected at the corresponding time (blue line in figure 2). It is possible (also afterwards) to draw more than one line or area, to edit, displace or delete lines or areas.

To help to get an idea of speed and direction of displacement, for example of some cloud, there is a special option. By putting two markers in the map and filling out the difference of time needed for travelling from marker one to marker two, the speed and direction of the displacement are calculated. These values can be taken over to the box at the upper right to make a new timing.

Specially for aviation forecasters there is an tool to help compose a SIGMET. A line or area must be drawn in the map and after that the 'coordinates' button must be clicked. The clicked coordinates in the map appear in the box at the bottom right corner of the window. Now click the 'sigmet' button if you wish to compose a sigmet with these coordinates. A new window will pop up (see figure 3). Now from the left to the right click for every (necessary) element the value and the text of the SIGMET appears in the textbox when the button is clicked. This way of composing a SIGMET will reduce the risk of introducing errors due to working with coordinates and will improve the content of the SIGMET in terms of allowed combinations and the order of the elements.

## Future development

Although already usable, the nowcasting tool is still under construction. The option to use model output instead of a fixed speed and direction for displacement will be built in. For the time being HIRLAM11 winds for 8 different levels (surface up to 5000 ft) are planned.



		Hoogte 1		Hoogte 2									
OBSS TS	OBS	N	OF LINE N5244 E00302 - N5228 E00344 - N5212	TOP	ABV	SFC	360	FT	/	FT	MOV	STHR	INTSF
EMBD TS	FCST	NE	ENTIRE FIR								N	5KT	WKW
FRQ TS		E									NE	10KT	INC
SQL TS		SE									E	16KT	
OBSS TSGR		S									EHE	20KT	
EMBD TSGR		SW									E	25KT	
FRQ TSGR		W									ESE	30KT	
SQL TSGR		NW									SE	35KT	
TC (tc name)											SSE	40KT	
SEV TURB											S	45KT	
SEV ICE											SSW	50KT	
SEV ICE (FZRA)											SW	55KT	
SEV MTW											WSW	60KT	
HVY DS											W	65KT	
HVY SS											WNW	70KT	
VA (volcano name)											NW	75KT	
ROOACT CLD											NNW	75KT	

Mogelijk zijn niet alle coördinaten in de ruimte hierboven zichtbaar, ze komen wel allemaal in de tekst van de SIGMET!

Genereer sigmet

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EMBD TS OBS SW OF LINE N5244 E00302 - N5228 E00344 - N5212 E00409 - N5144 E00434 - N5128 E00445 TOP FL360 MOV NE 25KT INTSF
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Let op! Het format van sigmets voor tropische cyclonen en vulkanische as wijkt af, raadpleeg de [werkinstructie](#)!