

Integrating Activities for Advanced Communities



D3.16 - New station presentation features integrated on the INTERACT website

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Dissemination Level		
PU	Public	X
PP	Restricted to other programme participants (including the Commission Services)	
RE	Restricted to a group specified by the Consortium (including the Commission Services)	
CO	Confidential, only for members of the Consortium (including the Commission Services)	

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Publishable Executive Summary

The INTERACT Station Managers' Forum has developed templates for customised short video clips of INTERACT research stations and developed a user manual for stations to produce 360 degrees 'street view' of the station, facilities and surrounding environment.

The purpose of these products is to provide more information for visiting scientists about the research station and give a visual impression of the station itself, its facilities and the natural landscape. This will help visiting scientists in their preparations for the visit to optimise scientific output and safety of field activities.

The template and manual were developed in close cooperation with station managers at the SMF meetings and has been tested at selected stations. The template for making short introductory videos of research stations have been distributed to all station and once videos have been produced, links are inserted on the INTERACT website. The INTERACT Street View manual has also been distributed to all stations and eight '360 degree' cameras have been distributed for circulation among INTERACT stations.

1. INTERACT customised short video clips

1.1. Development process

Association of Polar Early Career Scientists (APECS) has been responsible for the production of the customised short video clips template for INTERACT research stations to make promotional videos presenting the station, its facilities and the surrounding environment.

A team of young scientist participated in the development of the template, which was led by Fiona Tummon. A series of sessions were conducted at INTERACT SMF meetings, to provide input to the template and discuss draft versions.

The template was tested in the production of short promotional videos for two selected research stations, Abisko Scientific Research Station, Sweden, and Villum Research Station, Greenland. The movies were shown at the INTERACT SMF IV meeting in September 2018, to get feedback and suggestions for revision of the template. This resulted in a final version of the template that is distributed to all INTERACT stations.

Video clips are posted on the INTERACT website under the station information pages as they are developed.

Abisko Scientific Research Station, Sweden:

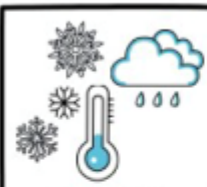



<https://eu-interact.org/field-sites/abisko-scientific-resarch-station/>

Villum Research Station, Greenland:





<https://eu-interact.org/field-sites/villum-research-station/>

1.2. Video template for research stations


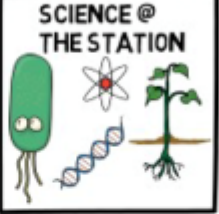


INTERACT STATION VIDEO STORYBOARD

 <p>WEATHER</p>	<p>5-10 seconds</p> <p>Some weather-related imagery.</p> <p>A brief description of the type of weather to be expected during the field season (temperatures, amount of precipitation, etc.).</p> <p>Some mention of what type of clothing is necessary might also be appropriate.</p>
<p>ENVIRONMENTAL FEATURES</p> <p>WILDLIFE</p> 	<p>5-10 seconds</p> <p>Are there particular features of the environment of which visitors should be aware? E.g. Is there wildlife one needs to watch out for, etc. Mention anything important for teams planning their field work.</p> <p>If you can get nice imagery of wildlife, this would be a great place to include it!</p>
<p>SURROUNDING LANDSCAPE</p> 	<p>5-15 seconds</p> <p>Again some imagery of the surrounds of the station. This time with more details about the local environment, e.g. glaciers, wetlands, vegetation types, etc.</p> <p>This could be nicely filmed using a drone.</p>
<p>STATION FACILITIES</p> 	<p>5-15 seconds</p> <p>This segment describes what facilities are available at the station.</p> <p>Images from inside the station, e.g. bedrooms, kitchens, etc. (the labs come in the next segment) should be included. Is there electricity, running water, etc.</p> <p>Other images of the station, as appropriate (e.g. showing transport options to get into the field such as snowmobiles, etc.)</p>

INTERACT STATION VIDEO STORYBOARD

<p>INTERACT INTRO</p> 	<p>5-10 seconds</p> <p>There will be a standard intro for all station videos, with INTERACT logos and common theme music.</p> <p>This could be where station funders are acknowledged, etc. (although this can also come at the end as well – or both).</p>
<p>ABISKO</p> 	<p>5-10 seconds</p> <p>A continuation of the previous segment, but moving closer to the station.</p> <p>A voice-over could say a little about the station location – altitude, environment, etc.</p> <p>Again, this is a nice place to show some of the beautiful scenery around the station!</p>
<p>FLY IN TOWARDS THE STATION</p> 	<p>5-15 seconds</p> <p>If feasible, use a drone to have some nice imagery of getting to the station. This will give some idea of what it takes to arrive at the station as well as a feeling for the surrounding environment.</p> <p>This is a nice place to show some of the beautiful scenery around the station!</p>
<p>WELCOME TO THE STATION!!</p> 	<p>10-20 seconds</p> <p>Some words of welcome from the station manager. This should include at least:</p> <ul style="list-style-type: none"> - Size of the station - How many people can be accommodated - When the station is open (season) <p>The manager should stand outside one of the station buildings, ideally with a nice view of the landscape in the background.</p>

INTERACT STATION VIDEO STORYBOARD

 <p>LAB FACILITIES</p> <p>5-15 seconds</p> <p>What lab facilities are available? Is there storage space (e.g. deep-freezes etc.)? Is there a workshop for repairs, etc?</p> <p>This segment can show the interior of the station labs and any other relevant equipment available for use in the field.</p>	 <p>SCIENCE @ THE STATION</p> <p>10-20 seconds</p> <p>This segment provides an overview of the science carried out at the station – biology, physics, ecology, etc.</p> <p>Scientists could be shown out in the field, in the lab, or interviewed.</p>
 <p>WE LOOK FORWARD TO HOSTING YOU!</p> <p>10-15 seconds</p> <p>A closing segment where the station manager can encourage people to come to the station.</p> <p>The manager can stand in the same place as the beginning segment, or in another similar location (also with view of the station and/or surrounds).</p> <p>Pan-out to a wide view, moving away from the station - again maybe filmed with a drone.</p>	 <p>INTERACT OUTRO</p> <p>5-10 seconds</p> <p>There will be a standard outro for all station videos, with INTERACT logos and common theme music.</p> <p>This could be where station funders are acknowledged, etc.</p> <p>Also make sure to include contact information here (email address, website, etc.). This information will stay on the screen as the video ends.</p>

2. INTERACT Street View of research stations

2.1. Development process

The INTERACT Street View concept and manual has been developed in cooperation with Mapillary, a SME providing an open source GIS platform for 360 photos, and INTERACT station managers.

The idea was tested and developed with staff from Mapillary at a number of research stations (Tarfala Research Station, Sweden, Stations in Ny-Ålesund, Svalbard, and Fini, Faroe Islands) with participation of station staff. A draft manual was tested and discussed at INTERACT SMF meetings and a final printed version of the manual presented at SMF IV held in September 2018.

<https://eu-interact.org/field-sites/tarfala-research-station/>

<https://eu-interact.org/field-sites/uk-arctic-research-station/>

<https://eu-interact.org/field-sites/awipev-rabot/>

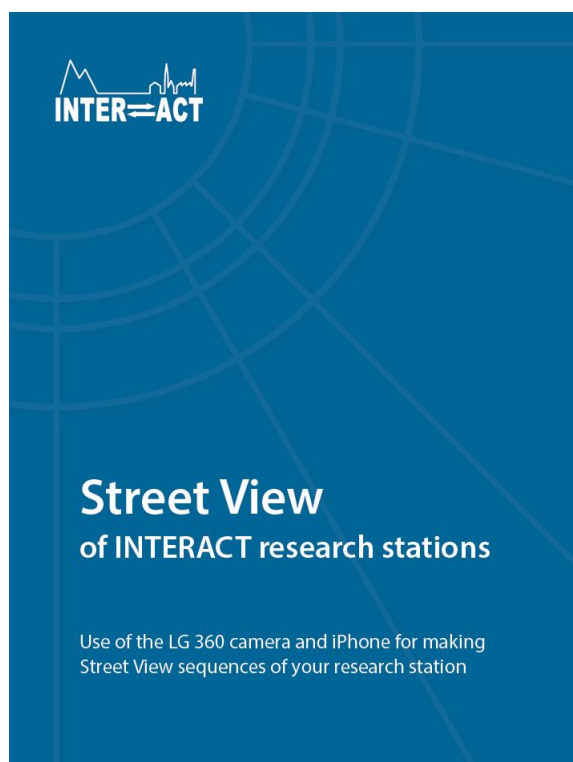
<https://eu-interact.org/field-sites/sverdrup-research-station/>

<https://eu-interact.org/field-sites/cnr-arctic-station-dirigibile-italia/>


<https://eu-interact.org/field-sites/faroe-islands-nature-investigation/>

At the SMF IV meeting held in September 2018, 8 cameras were distributed among INTERACT stations for later circulation to all other stations. Links to INTERACT Street View photo from INTERACT stations will be posted on the INTERACT website under the station information pages as they are developed.

2.2. INTERACT Street View Manual



Produced by INTERACT Station Managers' forum
Published 2018 (first edition)
Graphic design: Juana Jacobsen, AU Bioscience Graphics Group
Publisher: Aarhus University, DCE – Danish Centre for Environment and Energy, Denmark
Available as PDF on www.eu-interact.org



The Mapillary world view with zoom and search functions to locate your area of interest. Photo locations are indicated with green dots and when selected, you will see the photo and a map with its location.




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Quick guide

1. About INTERACT Street View

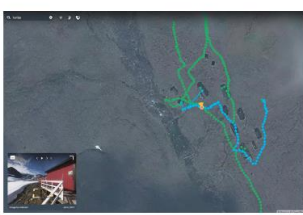
The INTERACT Street View kit enables research stations to capture geo-referenced 360° photos that can be viewed on the free open source platform Mapillary (www.mapillary.com).

Photos can be recorded as single images (e.g. of indoor facilities) or as a series of connected photos taken during a walk/hike (e.g. around station buildings, along route to sampling sites, etc.).


Once the photos have been uploaded to the Mapillary platform, you (and potential visitors to the research station) can zoom to the area of interest and then select photos or photo series to view by simply clicking on these. When viewing the photos, you can use the cursor to look 360° around from the photo points.

When exploring photo series from walks/hikes you can 'move' to neighbouring photos by clicking the white arrow heads in the bottom of the photo or start a 'movie' by clicking the 'Play icon' at the top of the screen(that automatically takes you through the photo series). It is also possible to 'jump' between localities by clicking on the desired photo point on the map (green dots).


On the map showing photo points, you can switch between a normal map view or a satellite image ortho-photo view. Mapillary also has various other functions that you can explore as you like.



View of a research station and the photo series captured here (series of green dots). When clicking on a photo, the specific photo series becomes blue.



Indoor photos can be geo-referenced and added to the Mapillary website without using the iPhone.



In the below left window, you can change between map view or photo view. Mapillary also allow different background maps to be used.

2. The INTERACT Street View Kit

Content

- An iPhone (currently the relevant driver for the LG 360 camera is only available for iPhone)
- A 360° camera
 - LG 360 CAM
- A powerbank
- Three charger cables (one for each type of equipment)
- A European type plug
- A selfie stick



Software for iPhone

- Mapillary App
- 360° camera app for LG 360 (360 CAM Manager)



The two apps can be downloaded to your smart-phone using your normal smart-phone software provider. Just search for 'Mapillary' and 'LG 360' and download the apps.

Register yourself/your station on the Mapillary website (You need to be logged in to capture photos and add them to the Mapillary website). The Mapillary website is available on: www.mapillary.com.

If you use an iPhone provided by INTERACT, there will be a sim-card with almost no money in the phone to enable it to work. Please do not use it for calling or any data connection.

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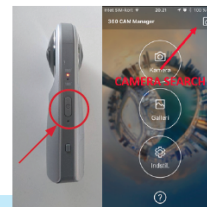
3. Capture outdoor geo-referenced photo series

Remember to fully charge all batteries on iPhone, LG 360 camera and power bank before starting (LG 360 camera may only operate for one hour on one single charging). If needed use the power bank to charge during a break. Also remember to make sure that there is plenty of memory available on both the iPhone and the LG 360 camera, before starting. If necessary, delete previous photos on memory cards. You can do this by simply connecting the iPhone or the LG 360 (both with memory card inserted) to your computer and then check the card in the relevant file list on your computer and delete relevant photos.

3.1 Preparations in the field

Connect the iPhone and the LG 360 camera through the camera's WiFi

- 1 Push the on/off button on the right side of the LG 360 camera to activate the camera.
- 2 Open the camera app ('360 CAM Manager') on the iPhone.
- 3 Search for camera with the top right 'Search icon'.
- 4 Accept when asked if you want to use LG 360 for WiFi. At first connection you need to insert code "00 + Camera ID number seen on the iPhone".
- 5 Check WiFi connection between camera and iPhone in 'Settings' on your iPhone (connect to LG 360 WiFi if needed).



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3.2 Use the Mapillary App to capture geo-referenced 360° photos

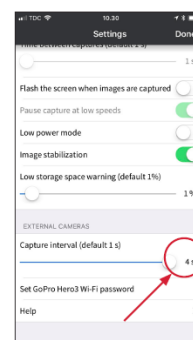
- 1 Mount the LG 360 camera on the 'selfie stick' and place it in a secure upright position, either in your back-pack or by holding it firmly in your hand (though be aware in challenging terrain). The camera should be held more or less vertical in a position being at least 20 cm above your head.
- 2 Open the Mapillary App on your iPhone.
- 3 Register for an account in Mapillary (if this is not already done on the iPhone)
- 4 Press the 'Camera icon' in the bottom of the screen.
- 5 Connect to the external camera by pressing the 'Add camera icon' on the screen and choose 'Add external cameras' and select LG 360 when found (if this takes too long, the WiFi connection between external camera and iPhone may have been lost – then connect again).
- 6 The app then takes a trial photo and you are ready to go, simply press 'start sequence' in the Mapillary App ('Red button icon') and start walking.
- 7 When finished, simply press 'stop'.

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Recommended capture settings

The Mapillary App allows external camera capture rates between 0.5 and 4 seconds. It is recommended to have it set to 4 seconds when taking photos around station facilities. For longer hikes you can choose the maximum setting (6 seconds) to allow for longer coverage.

- Go to 'Settings' in the Mapillary App.
- Scroll down to 'External cameras' and 'Time between captures' and drag the cursor to desired capture rate.



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4. Capture and geo-referencing indoor photos of station facilities

If the iPhone provides a GPS position indoor, you can do as above when capturing outdoor photos.

If the iPhone's GPS signal is lost indoor, you can manually take single photos with the LG 360 without using the iPhone as control unit (simply hold the camera high above your head, push the 'shoot' button and later add geo-reference to the photos on the Mapillary website (see description of how in 5.2).



5. Upload photos to Mapillary

5.1 Upload geo-referenced photo series from the iPhone to the Mapillary website

The upload of geo-referenced photos to Mapillary is in two steps:

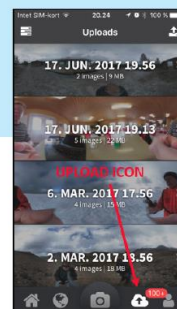
- Upload the photo series from the LG 360 camera to your iPhone via the internal internet connection between the two (this is needed to connect photos with the geo-reference taken by the iPhone).
- Upload the photos from your iPhone to the Mapillary website.

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Step 1: How to transfer photos from LG 360 camera to the iPhone

Before you are going to upload photos from the LG 360 camera to your iPhone, please make sure that both devices are fully charged or connected to a power supply and that the iPhone has capacity to receive the relevant pictures.

- 1 Make sure that there is WiFi connection between the LG 360 camera and the iPhone. The procedure for establishing connection between the LG 360 camera and the iPhone is described above in the section 'Connect iPhone and LG 360 camera through the camera's WiFi'.
- 2 Go to 'Home' in the Mapillary App.
- 3 Press the 'Upload icon' to the right of the 'Camera icon'. When done, you can see your photo series in the Mapillary App (under date and in separate sequences).

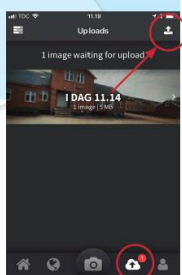


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Step 2: Transfer photos from iPhone to the Mapillary website

When you are going to upload photos from the iPhone to the Mapillary website, it is important that you have a strong and reliable internet connection and that you are not in need of using your iPhone for the next few hours (a typical sequence of c. 400 photos may easily take six-seven hours to upload). Ideally do it over night.

- 1 Open the Mapillary App
- 2 Press the 'Upload icon' (cloud and arrow), situated to the right of the 'Camera icon' at the bottom of the app.
- 3 View captured sequences, simply by pressing on them.
- 4 Press on the sequence you want to upload. When photos are seen, you can delete single shots at start or end, if you consider that they are not good enough.
- 5 To upload to Mapillary, simply press the 'Upload icon' (bar with arrow) in the top right corner of the app.



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5.2 Upload and geo-reference indoor photos with no GPS position from the LG 360 camera to the Mapillary website

This method also works for individual photos of field sites or other features of interest around the station.

Transfer photos to the computer (via cable between camera and computer or insert the micro SD card from the camera in the computer). This can be done with the normal file management systems of your computer.

- 1 Go to the Mapillary website.
- 2 Select 'Contents' (three horizontal lines in top left corner) and then select 'upload'.
- 3 Click 'Browse files'. Then select the photos that you would like to upload. Confirm your choice by clicking 'Open'.
- 4 Photos with no geo-reference will now appear as orange dots in the top left corner of the map. Click a dot to see the image.
- 5 On the map in Mapillary, zoom to the desired location of the photo and simply drag the orange dot to the appropriate position.
- 6 Continue until all dots are properly positioned. Then click 'Upload' in the bottom of the page.

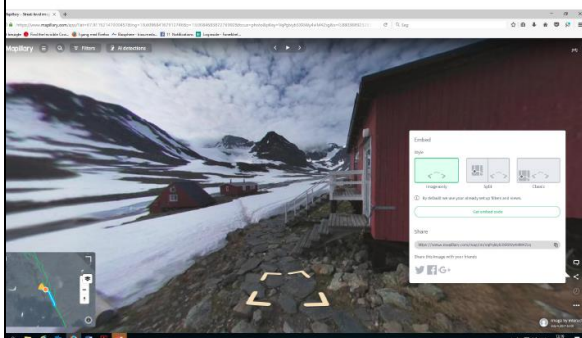
5.3 Publication of photos and photo series

The Mapillary team will review all photos before they are published and will blur faces of people to avoid recognition. This may take a few days. The registered user profile will be notified by e-mail, when photos are published.

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6. How to create a link to your station on Mapillary

Mapillary has a function in which you can make a link to a specific photo in Mapillary. If you insert this link on the website of your research station, it will lead users, clicking on the link, to the photo you want them to see. The link will actually open Mapillary and show the photo in a Mapillary view with the combination of a map with indication of the point where the photo was taken and the photo itself. The user of your website can then easily navigate from there to other photos of interest. So by inserting a link to e.g. the main building of your research station, you can direct users of your website to a Mapillary view of your research station to allow them to navigate around the research station from there. It is also possible to add other links, e.g. to field sites or natural features of interest.



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6.1 Making a link to a specific map position in Mapillary

- 1 Open Mapillary on your computer, www.mapillary.com and select 'Explore places' (takes you to www.mapillary.com/app).
- 2 Log in with your UserID and password.
- 3 Zoom to the location with a photo you would like as the start point when others explore your station. Then select the photo and if needed zoom out to the required position where relevant photo points are included in the map (note that you can switch between photo and map by clicking top right corner in below left insertion).
- 4 Click the 'Share/link icon' in the right side of the screen, i.e. the icon just below the 'Message icon'.
- 5 Click the 'Classic icon' in the 'Style' section.
- 6 Click the 'Get embed code icon'.
- 7 Copy the 'Share link' to wherever you want to use it (e.g. your station website).

Users clicking the link on e.g. your station website will then start up Mapillary and end in exactly the same point as you were, when you made the link.

Screen view of Tarfala Research Station including link to current view for display on the station's website.

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Quick guide

- Ensure all components are fully charged and have sufficient storage.
- Go to start of capture location.
- Connect camera and iPhone via the LG 360 camera app.
- Open Mapillary App.
- Connect Mapillary App to LG 360 camera.
- Change capture settings to every 4 seconds (or alternative desired capture rate).
- Start capture sequence and walk planned route around station facilities and to relevant field sites (this can be divided in several capture sequences, but it is recommended to keep it to a minimum). Supplement with indoor photos of station facilities.
- Transfer images from the LG 360 camera to the iPhone via the Mapillary App.
- Transfer image sequences to the Mapillary website.
- You can geo-reference photos from indoor facilities (if these lack geo-reference) using the Mapillary website.
- Share link to Mapillary on your website.

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