



## OCEA05 - RUS Webinar: Sen2Coral Toolbox for Coral Reef Monitoring

### THEORY QUESTIONS

**Q: How do we choose the maximum valid value (threshold) in the Land, Cloud and White Cap Mask processor?**

A: The value of the threshold should be adapted to each image, although in general value around 0.05 – 0.1 will perform well. To check the value for your image you can use the **Pixel Info** tool in **SNAP** and investigate the values in the NIR band.

**Q: Is there any more detailed user guide for the Toolbox?**

A: You can have a look to the detailed description in the SNAP Help.

**Q: Useful references and datasets.**

A: Green, E., Mumby, P., Edwards, A., and Clark, C. (2000). *Remote Sensing: Handbook for Tropical Coastal Management* (United Nations Educational, Scientific and Cultural Organization (UNESCO)).

Hedley, J.D., Harborne, A.R., and Mumby, P.J. (2005). *Technical note: Simple and robust removal of sun glint for mapping shallow-water benthos*. *Int. J. Remote Sens.* 26, 2107–2112.

Hedley, J.D., Roelfsema, C., Brando, V., Giardino, C., Kutser, T., Phinn, S., Mumby, P.J., Barrilero, O., Laporte, J., and Koetz, B. (2018). *Coral reef applications of Sentinel-2: Coverage, characteristics, bathymetry and benthic mapping with comparison to Landsat 8*. *Remote Sens. Environ.* 216, 598–614.

Leon, J.X., Phinn, S.R., Hamylton, S., and Saunders, M.I. (2012). *A 20 m spatial resolution seamless multisource Digital Elevation/Depth Model for Lizard Island, northern Great Barrier Reef*. PANGAEA, <https://doi.org/10.1594/PANGAEA.804566>

Lyzenga, D.R. (1978). *Passive remote sensing techniques for mapping water depth and bottom features*. *Appl. Opt.* 17, 379–383.

Mousivand, A., Verhoef, W., Menenti, M., and Gorte, B. (2015). *Modeling Top of Atmosphere Radiance over Heterogeneous Non-Lambertian Rugged Terrain*. *Remote Sens.* 7, 8019–8044.

Stumpf, R.P., Holderied, K., and Sinclair, M. (2003). *Determination of water depth with high-resolution satellite imagery over variable bottom types*. *Limnol. Oceanogr.* 48, 547–556.

### RUS QUESTIONS

**Q: How do I register for the RUS Virtual Machine?**

A: To register for the RUS VM go to the [RUS Copernicus](#) portal and register through the Copernicus Users' Single Sign On. During the activation of the account you will receive three e-mails; your account must be activated by the RUS front desk, therefore please allow few days for the process to be completed. Once your account is active, you can login to the RUS platform; go to “Your Dashboard”, and click “Request a new User Service”. Fill all the required fields to describe the desired VM and your project or choose a



training code/codes to repeat any of our webinars and receive a step-by step guide in PDF. It might take up to 2 days for the VM to be provided.

**Q: Where I can find a service similar to RUS available to residents of non-European countries?**

A: Unfortunately, due to very high interest in the RUS service we must limit the number of new users. Since the RUS service is funded by European Commission preference is given to applicants from European countries at this time.

Several new services have been developed under the initiative called DIAS (Data and Information Access Services), please find the links below. Unfortunately, none of the services are free of charge.



<https://www.onda-dias.eu>



<https://creodias.eu/>



<https://sobloo.eu/>



<https://mundiwebservices.com/>

**Q: Is the virtual machine we request with the training code specific or can it be used for different projects?**

A: The code only informs the helpdesk what training materials you wish to be uploaded on your VM. You have admin rights on your VM so you can install additional SW (provided you have valid license) and use the VM for different EO projects and applications.

**Q: Can we use 3<sup>rd</sup> party mission data in RUS?**

A: Yes, you can use any additional EO and other data that are free, you own or have appropriate license for, however, every project requesting RUS service must use Copernicus Sentinel data.

**Q: How can I download/upload data from/to the virtual machine?**

A: Each VM contains a detailed user guide. However, to download or upload data you can press **CTRL+ALT+SHIFT** and a tab will appear on the left side of your screen. Go to Devices and navigate to the folder containing the file you wish to download. Alternatively, you can navigate to the folder where you wish to upload data store on your local PC and then click on Upload at the top of the tab, navigate to where your data is stored and click OK.

**Q: Can I repeat the exercise on my own machine? Why is it better to use RUS VM?**

A: You can use your own machine to repeat the exercise, all the software used can also be installed on your local PC. However, Sentinel data are large, and their processing might require resources not available on your local machine (depending on application). In such cases the RUS machines provide the computing and storage capabilities needed.

For this exercise you will need minimum of 8 GB RAM to avoid problems during processing, especially for Sen2Cor atmospheric correction.