**Space App Camp 2021**

**App idea-proposal template**

During the Space App Camp, as a Participant you will conceive and implement an innovative idea for a Smartphone App using Earth Observation data (hopefully with a viable business case speaking for it, or perhaps societally very relevant).

Below an inspirational list of categories, but feel free to propose your own:

1. **Marine Litter and Coastal Zone Management**, e.g. detect Marine debris from Sentinel-2
2. **Early Warning Fire detection using the Sentinels**, e.g. Sentinel-2 (as precursor for Phisat-2)
3. **Artificial Intelligence for EO data,** e.g. semantic labelling and classification, optical super-resolution
4. **Smart Cities in 3D**; VR rendering of cities based on EO images and Artificial Intelligence
5. **Health & Tropical Disease Risk Forecasting**; towards predicting vector-borne diseases using EO
6. **Education applications for EO and AI**
7. **Gamification**, e.g. from cloud patterns in precursor Sentinel-4 imagery guess the convective events
8. **Any category** of your choice, also to be validated by ESA.

As part of the application requirements, you are to submit an App idea-proposal. Below the requirements of this proposal are stipulated.

We strive to reach a reasonably high level of maturity, with the Technical Readiness-levels (TRL)[[15]](https://en.wikipedia.org/wiki/Technology_readiness_level#cite_note-15) deemed acceptable highlighted in yellow below:

TRL 1 – Basic principles observed

TRL 2 – Technology concept formulated

TRL 3 – Experimental proof of concept

TRL 4 – Technology validated in lab

TRL 5 – Technology validated in relevant environment (industrially relevant environment in the case of key enabling technologies)

TRL 6 – Technology demonstrated in relevant environment (industrially relevant environment in the case of key enabling technologies)

TRL 7 – System prototype demonstration in operational environment

TRL 8 – System complete and qualified

TRL 9 – Actual system proven in operational environment (competitive manufacturing in the case of key enabling technologies; or in space)

**App idea – proposal template (please provide this as a part of the online registration form):**

Your name:

App idea name:

App description (max. 2000 words, explicitly describe the customer journey):

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**Note that** the idea you submit is your own, even if basing yourself on some of the pre-formulated challenges or examples (A-G). Taking ownership means you hold all benefits but also all risks. In the next section we ask you to list some of these risks, and how you are planning to mitigate some of these risks. Please be short and to the point in your answers.

| **Criterion** | **Answer** (*overwrite the provided description*) |
| --- | --- |
| What function of your idea justifies the need for a mobile Smartphone App?  | *Only a smartphone brings the info to where the decision-maker is (e.g. farmer in the field), solicit location-aware feedback from peers in the same science domain, facilitate on-screen digitization based on contextual geo-data, Edge-AI is run on the phone (e.g. TensorFLow), better labelling data is expected if there is a mobile or tablet app[[1]](#footnote-1), etc.]* |
| Which Technical Readiness-level (TRL) do you expect to reach during the Space App Camp? (TRL 4 - 7) | *Indicate the target TRL* |
| What could be your unique contribution to the App idea? | *What skill, experience, or attitude makes you the perfect fit to pursue the idea?* |
| What skills are needed to reach the target TRL? | *List essential skills* |
| Which skills do you already possess? | *List essential skills you already posses* |
| What datasets are needed to reach the target TRL? | *E.g. Furnished, annotated, accessible, near real-time, resolution (spatial/temporal)* |
| Which datasets do you already possess? | *E.g. Furnished, annotated, accessible, near real-time, resolution (spatial/temporal)* |
| Which software functionality do you need? | *List essential software frameworks or algorithms (and their respective license)* |
| What software functionality do you have already? | *E.g. AI-classification algorithm, image segmentation algorithm, dataset visualisation method, etc.* |
| What launching customers are needed? | *E.g. Users in the field to validate the usefulness of the information disseminated and/or test UIX design* |
| Which launching customers do you already have access to? | *List launching customers from the above you already know and can easily engage in a first validation of your idea* |
| What instruments are needed to reach the target TRL? | *List of devices and compute requirements for the validation of your idea (e.g. IoT-sensors, Edge-compute, Cloud instance, AI-compute devices, etc.)* |
| Which instruments do you already have access to? | *List instruments from the above you already know and can easily get access to in order to validate your idea* |
| What industrially relevant environments are needed to reach the target TRL? | *List environments for the validation of your idea (e.g. experimental farm, testbed, ocean vessel, citizen sciences initiatives to provide crowdsourced observations, etc.)* |
| Which industrially relevant environments do you already have access to? | *List industrially relevant environments from the above you already know and can easily get access to.* |
| What other validation activity do you consider key for a possible investor to help fund your idea? | *e.g. Interviews with individual customers, validate Customer Journey Map, validate added-value products from EO by decision-makers on the ground, Scalability test, Costing experiment (testing cheaper alternatives), etc.* |

1. see for example a Generic labelling app for AI training data generation from Sentinel data (a mobile version of <https://github.com/ESA-PhiLab/iris>) [↑](#footnote-ref-1)