

Terms of Reference for the proposed Sand and Dust Storm (SDS) App

(draft by RGW partially based on one-pager by Emma Thomson of 27 May 2019)

Date of the Announcement: *to be included*

Overview

In September 2018, the 24th Meeting of the EMG Senior Officials agreed to form the "Coalition to Combat Sand and Dust Storms (SDS)", including UN agencies and other organizations and research institutes, to address this challenge. The objectives of the SDS Coalition are to:

- Prepare a global response to sand and dust storms, including a strategy and an action plan, which could result in the development of a United Nations system-wide approach to addressing sand and dust storms;
- Identify entry points to support affected countries and regions in the implementation of cross-sectoral, and transboundary risk reduction and response measures for SDS;
- Convene and enhance dialogue and collaboration among affected countries and the UN system agencies at global, regional and sub-regional level; and
- Provide a common platform for technical expertise and resources for strengthening preparedness measures and strategies for risk reduction, consolidated policy, innovative solutions, advocacy and capacity building efforts, and fund-raising initiatives.

One of the first tasks that it was decided to collectively undertake is the creation of an 'app' capable of offering SDS forecasts to a mainly public audience, and having a health advisory element. The app would initially be developed as a prototype, and later expanded and updated as more resources and relevant information become available. For this purpose, it is proposed to engage an app developer to prepare a prototype version within the coming months.

Key Elements/Functions of the App

The app should be able to provide forecasts of SDS events, focusing on what is most needed for the public to help ensure that they can be as prepared as possible when such events occur. It should incorporate a "traffic light" function regarding expected atmospheric dust concentrations at a regional scale, and offer "recommendations" (not warnings as such) at a regional and also if possible, national basis. The app is meant to be used by the broad public and should include a health advisory element, as well as links to organisations' websites which offer information on relevant global policies and actions to be taken in regard to SDS.

As examples, the developer may wish to consult existing apps such as the following, which offer a variety of desirable features to incorporate in the development of the SDS app:

- the Disaster Reporter feature in the FEMA mobile app, which allows users to take and submit Global Positioning System photo reports of disasters so they can be displayed on a public map for others to view;
 - family disaster/preparedness checklists ("CSEPP Ready"; Oak Ridge A.U., Tennessee, USA);
 - information about shelters ("ReadyTN" by State of Tennessee, USA);
 - provides notifications ("Disaster Alert" by the Pacific Disaster Center; Kihei, Hawaii, USA);
 - use of maps to portray data ("NOAA World Radar-Free Rain & Weather Forecast" by the International Travel Weather Calculator; Washington, D.C., USA); *and*
 - multi-lingual (American Red Cross Apps for Natural Disasters (which includes e.g. 'flood', 'hurricane', 'wildfire', 'earthquake' and 'tornado' in multiple languages).
- (see the article "*Emergency Preparedness and Disaster Response: There's An App for That*" by Daniel J. Bachmann, MD; Nathan K. Jamison, BS; Andrew Martin, MD; Jose Delgado, MD; and Nicholas E. Kman, MD.)

WMO's SDS Warning Advisory and Alert System (WAS) can also be considered by the developer in terms of its functionality and useful information offered. The SDS-WAS can provide forecasts of events, either globally by CAMS and/or regional alerts through regional SDS-WAS centres.

Before final approval by the SDS Coalition and becoming operational, the app will need to undergo thorough testing by various parties, and also be approved for general use within the numerous countries around the world where it is expected to be employed. The Coalition will also need to consider how the app will be publicised, in order that users know about and use it.

Commented [RW1]: These sentences are probably not necessary in the developer's ToRs, but I kept them to flag these particular issues.

Specific Tasks and Responsibilities of the Developer

The developer (whether an entity or an individual is selected) will be responsible to conduct the following activities as part of the consultancy:

- develop a concept design of the functionality and 'look-and-feel' of the app, for approval by SDS Coalition representatives, before undertaking the actual development.
- once the design is approved, undertake the coding of the prototype app.
- test the app to assure it is functional on all major smartphone platforms (Apple iPhone, Huawei, Oppo, Samsung, Xiaomi et al.).
- demonstrate the near-final version for representatives of the SDS Coalition.
- finalise the app following comments/feedback received.

Work Location: home-based

Expected Duration and schedule of main stages

A total of up to six months' time in envisioned for the consultancy, with the following stages:

- design concept by 1 September
- initial coding completed by 16 October
- testing completed by 31 October
- demonstration by 15 November
- final coding by 16 December

Main Outputs and Results of the Consultancy

- a concept design, including functionality and 'look-and-feel' of the app
- a fully operational SDS app, demonstrably working on all major smartphone platforms;
- the final code itself provided at the end of the consultancy to the SDS Coalition;
- expressed satisfaction of the SDS Coalition's members; and
- ultimately, useful advisory messages for the broad public.

Qualifications/Special Skills

- experience in app design and understanding client needs
- in-depth knowledge of (an) appropriate coding language(s)
- ability to adapt/improvise vis-a-vis client requirements
- ability to work against deadlines

Education

- background in computer science/information technologies (Master's degree)?
- other?

DRAFT

