

## Terms and Conditions for National Level Open Challenge Competition– “Solution to Problem” – DEFEXPO 2018

Govt. of India (MoD) proposes open challenge for ‘solutions to the problems’ from Innovators, Students, Professionals, Participants and Foreign Nationals who are attending Defexpo – 2018 Event.

### I. Topic (Problem):

#### 1.1 Ejection Mechanism for Helicopters

Due to the clearance problems with the rotating blades, pilot ejection from Helicopter is extremely difficult than the ejection from Fixed Wing Aircraft. Design the safe ejection mechanism for Helicopters.

or

#### 1.2 Nap of the Earth / Valley Flying using auto pilot due to GPS signal corruption in hilly areas / high rise buildings

GPS/Satellite Navigation is a universal navigation tool employed for a plethora of purposes and by varied users. Aircraft/Helicopter/UAV navigation is one such application which depends heavily on GPS/Satellite Navigation. Under normal flying conditions, GPS signal is usually uninterrupted and the accuracy of the system is generally adequate. However, GPS system has a few problems and the first one is that the system is owned by a foreign government and therefore susceptible to political upheavals. Secondly, GPS due factors like multi bounce, atmospheric effects, etc GPS signal gets corrupted and this gives an erroneous navigation solution which may cause serious problems specially when flying NOE (Nap Of Earth) or while flying around valleys in poor visibility conditions. It is therefore important to devise a mechanism which would assist in carrying out the aforementioned tasks effectively even in a GPS denied environment.

**Problem :** Design a system which would ensure high navigation solution integrity even in an environment with poor or no GPS/Satellite navigation signal. The system can either be an independent sensor or may make use of existing self-contained systems (Accelerometers, Gyros, Magnetometer, etc)

or

#### 1.3. Location based tactical messaging collaboration platform:

Providing real time location of a group of troops on a single screen has many advantages. The group of people can be member of an elite force who are infiltrating a terrorist/naxalite location. Their real time location can provide them situational awareness and upper edge in decision making. Text to Speech and Speech to text is an important requirement for many of modern warfare applications.

Mobile based application can be developed that will help the troops to locate other members of group in real time using GPS technology. Proposed architecture should also provision exchange of real time multimedia streaming among the group members. Real time marking/notification on the map will help other members to identify the treat and act accordingly.

Or

#### 1.4. Auto Identification of Drones/UAV

Over the decade, the popularity & accessibility of drones/UAVs have increased. Drones/UAVs are now gaining high interests from both military and civil market. Due to this, the misuse of technology is also reported all over the world. This initiates a need for identification of the drone before an action is initiated to destroy its mission.

Methods to implement real time/automatic identification of drones/UAVs need to be evolved/proposed.

2. **Last date for entry and Language:** Entries may be submitted **till 12:00 Hrs 8<sup>th</sup> April 2018** in English language only.

3. **Prizes:** Winners will receive attractive cash prizes as per the following table:

Category	Prizes INR
First Prize - One	50,000
Second Prize - One	30,000
Third Prize - One	10,000
Consolation Prizes- Two	2 x 5,000
<b>Total</b>	<b>1,00,000</b>

Names of the winners will be published on DEFEXPO 2018 website and separate intimation will also be sent to each of the winner for receiving the prize during DEFEXPO 2018. Winners will be requested to share their Bank Details for online transfer of Prize Money.

#### 4. Eligibility

- 4.1 Competition is open to Innovators, Students, Professionals and Participants from India and foreign nationals who are attending DEFEXPO 2018.
- 4.2 Solutions submitted by the participants must be accompanied with one page Bio data, Copy of Government ID, Address, Contact No., email address and self-certification of originality. **Entries received without these shall be rejected** and **NO query** / correspondence etc. pertaining to such entries shall be entertained under any circumstances.
- 4.3 Wards and relatives of employees of MoD / DPSUs / OFB / Defence Services are NOT ELIGIBLE to participate in this competition.

5. **Fee:** There is no entry fee for participation in the National Level Open Challenge Competition – “Solution to Problem” – DEFEXPO 2018.

#### 6. Structure of the Open Challenge Competition:

- 6.1 The Competition entries shall have to be on one of the topics provided and submitted by the last date stipulated (i.e., **till 12:00 Noon 8<sup>th</sup> April 2018**).
- 6.2 **Only one topic** is allowed per participant or per collaborating team of co-authors. In case of a team winning the prize, the prize amount will be shared among the team members.

#### 7 Length of Solution

- 7.1 The Solution should be described in about 5000 words and a Power Point Presentation of not more than 15 slides conveying the essence of the solution. There is no minimum word limit; however, authors are encouraged to submit Solutions of not less than 2500 words.

## 8 Format of the Solution:

- 8.1 Typed on A4 size electronic page.  
8.2 Font size shall be 12 points (English) in Times New Roman  
8.3 1.5 inter linear space  
8.4 Margins of one inch (2.54 cm) on all the four sides

## 9 Citations:

- 9.1 Participants may use any recognized style of referencing system and this must be consistently used throughout the Solution.  
9.2 The List of References shall include all cited texts throughout the Solution.

## 10 Procedures for submissions of Solution:

- 10.1 The entries have to be sent, latest **till 12:00 Noon 8<sup>th</sup> April 2018** through email only at [defexplg@defexpoindia.in](mailto:defexplg@defexpoindia.in) ENGLISH language only. Entry received after due date and time, will not be considered.  
10.2 Subject of such email should be "**Open Challenge Competition – DEFEXPO 2018**".  
10.3 Only original Solutions will be considered for the competition. Previously published Solutions shall be rejected outright. Any form of plagiarism will result in disqualification of the Solution.  
10.4 Participants shall ascertain and attest to the originality of their entry and a disclaimer clause to this effect shall be added.

## 11 Scoring of the Solution:

- 11.1 While assessing the documents the weightage would be given as below:

- Originality and clarity of the content
- Quality of the analysis and research
- Feasibility of implementation and Structure of Solution

- 11.2 The quality of language will not be a decisive factor, as long as the text retains its clarity and coherence.

## 12 Copyrights:

- 12.1 MoD, GoI reserves the right to use the information/ view freely in any manner it requires.

- 13 DEFEXPO 2018 Organising Committee shall not be responsible for any Solution(s) not received. No Solution related queries will be entertained if received after the deadline.

- 14 Decision of the DEFEXPO 2018 Organising Committee in deciding the winner(s) shall be final and binding and **NO** query, correspondence etc. in this regard shall be entertained.



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Ministry of Defence  
Government of India



India : The Emerging Defence Manufacturing Hub  
**DEFEXPO 18**  
**INDIA** 11-14 APRIL 2018 CHENNAI  
Ministry of Defence



Defence Exhibition Organisation  
Ministry of Defence  
Government of India

- 15 Laws of India with jurisdiction of courts at Delhi shall apply to this competition. Solutions incompatible with the above rules and conditions will not be considered.
- 16 Submission of entries to the competition implies acceptance of the above terms and conditions by the participant(s).
- 17 **Announcement of winner:** 10<sup>th</sup> April 2018.