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Directorate General of Information Systems
General Staff Branch
DG Info Sys Enclave
Integrated HQ of MoD (Army)
New Delhi – 1100 10

B/05146/Gen/Ops/Info Sys

19 Jul 2017

The Director,
Indian Institute of Technology (IIT), Delhi
Hauz Khas
New Delhi – 110016

INTERACTION WITH DIRECTOR, IIT DELHI

1. Lt Gen Anil Kapoor, VSM, Director General of Information Systems visited IIT, Delhi for interaction with Prof V Ramgopal Rao, Director, IIT, Delhi on 13 Jul 2017. Following were also part of the interaction:-

- (a) Prof BR Mehta, Dean R&D, IIT Delhi.
- (b) Prof Kolin Paul, CS Dept, IIT Delhi.
- (c) Col H Bhatnagar, Director (Operations and Planning).
- (d) Lt Col JS Dhapola, Staff Officer to DGIS.

2. The interaction was aimed at achieving synergy between IIT, Delhi and Indian Army to facilitate its march towards net centricity. Discussions were centered on leveraging strengths of IIT, Delhi for automation of Indian Army. Following important issues were discussed:-

<u>S/No</u>	<u>Issue</u>	<u>Decision</u>
(a)	<u>Problem Statement.</u> A number of problem statements have been generated to augment the Army's automation efforts. These were explained to the professors.	Directorate to share the problem statements with IIT, Delhi for consideration. (Problem statement are attached as Appendix).
(b)	<u>M Tech Officers.</u> A number of officers are undergoing M Tech course in various disciplines of Computer Science/Engg at IIT, Delhi. Efforts of these officers need to be channelised towards meeting technological requirements of Army.	The point was agreed to by the faculty of IIT, Delhi. Way forward will be worked out for doing projects by these officers as a continuum.
(c)	<u>Hackathon.</u> It was explained that Indian Army is looking at harnessing young talent by conduct of a Ideathon cum Hackathon. Active support of IIT, Delhi was solicited.	Professors were in agreement with the proposal. Such an activity would be a motivator for students of IIT. It was suggested that the tech fest of IIT, Delhi - Tryst could also be leveraged towards encouraging students.

<u>S/No</u>	<u>Issue</u>	<u>Decision</u>
(d)	<u>Centre of Excellence (CoE).</u> Various CoE at IIT, Delhi and research works being undertaken were explained to DGIS by Prof BR Mehta.	It was decided that the work by CoE would be studied to leverage them for benefit of Indian Army.

3. Way Forward.

- (a) It was decided that a set of problem statements be forwarded to IIT, Delhi for analysis. This would be followed by a presentation on the problem statements at IIT, Delhi for a larger audience.
- (b) Projects by Indian Army M Tech Officers to be steered in a manner that they are of utilisation for the Army.
- (c) Students from IIT, Delhi would be encouraged to participate in the proposed Hackathon being organised by Indian Army.

4. For information pl.



(Bhavesh Mudgal)
Major
General Staff Officer 1 (Operations)
for Director General of Information System

Copy to:-

DCOAS (IS&T)/DDG ICT

- for info pl.

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Appx

(Refers to para 2 (a) of DGIS letter
No B/05146/Gen/Ops/Info Sys dt

19 Jul 2017)

PROBLEM STATEMENTS: HACKATHON

Ser No	Problem Statements	Description
<u>Operation Information System (OIS) Projects</u>		
1.	Geo-referencing of inputs from Surveillance devices.	Surveillance application takes input from various sensors but the inputs are not geo-referenced. The inputs need to be geo-referenced so that the changes are automatically referenced to maps.
2.	Development of video compression techniques to transmit videos /HD images on low bandwidth radio set.	A Surveillance Project utilises low bandwidth radio set for transmitting images and videos on VHF band radio set. Compression of videos/HD images is required for passing large amount of data over restricted bandwidth.
3.	Automatic changeover from Primary media to Secondary media in case of failure of primary media.	Presently, no technique exists to change over from Primary media (UHF) to Secondary media (VHF). This is required to be automated.
4.	Integration of networks with disparate security profile.	The operational applications are being developed with different security profiles viz G2, G3 and G4 depending on the classification of data residing on them. There is a requirement of providing a solution wherein these disparate networks with different security profiles can be networked together without effecting the overall security grading of the projects.
<u>Management Information System (MIS) Projects</u>		
5.	Integration of disparate networks.	Indian Army is presently working on various Data Network which have different levels of security and are air gapped from each other. There is a constant need to interact with other Networks which are air gapped to include VPNs such as LANs, Internet, inter service network etc. There is a need to bridge the air gap between the networks and Internet while still maintaining the security and integrity of the air gap. A technical solution for the same is required to be developed/ designed.
6.	ERP customisation for MIS applications.	ERP solution is being selected for various MIS applications and the same needs to be customised as per requirements of Indian Army. Solution is needed to effectively customise the ERP application.

Ser No	Problem Statements	Description
7.	e-Learning.	A number of Officers/Junior Commissioned Officers/Other Ranks of Indian Army undergo courses at training institutions. The number of courses can be optimised through e-Learning. Aspects of security and connectivity need special attention.
8.	Office Automation.	Office automation application is required to automate the complete dak procedures at various formations/units as per requirement of Indian Army.
9.	Aadhaar Based Mobile Application (ABMA) – Enhancements.	An Aadhaar based mobile application is being developed at the Directorate. Quick solution is required for enhancing the functionalities of the application as per requirement of Indian Army.
10.	SMS / IVRS Help-line to augment non-smart phones.	ABMA is being developed as a tool for grievances redressal, information dissemination & welfare of troops. A large number of troops are located in remote locations without mobile coverage. A SMS/IVRS based system for non smart phones for remote loc is proposed to extend services of ABMA.
11.	Geo-fence control - smart phones.	A Geo-fence based system is required to control access of mobile phones in restricted military locations.
12.	Prophylactic security of mobile phones.	Ensuring information security in Unit/ headquarters premises by pro-actively controlling functionalities of Smart Phones, such as Camera, Microphone, apps, GPS, USB, etc without depriving the end-user of other technological benefits of a smart phone being harnessed for organisation and personnel requirement.
13.	Secure Mobile communication architecture.	Implementing a secured mobile communication architecture using generic mobile devices operating on Android / IOS with Internet connectivity. The architecture should be tamper proof and prevent by passing by the user.
14.	Digital Signature without Hardware token.	Digital signature ensures the authentication of files/documents. Presently, hardware tokens are utilized for the same. To obviate the security issues related to hardware tokens and to cater for digital signing of documents on the go, it is required to have a technical solution for digitally signing a document without hardware token.

Ser No	Problem Statements	Description
15.	Implementation of Open Source Artificial Intelligence (AI) engine on a logistics application for stock forecasting.	<p>(a) Integrated Quarter Master Package (IQMP) as an application gathers comprehensive data on rations, clothing, fuel etc. Artificial Intelligence is already being extensively used by retail giants for warehousing/ management of items stock in anticipation of the customer demands. Stocking of items by anticipating the demands/ requirements of users during War as well as Peace is not upto the mark as the data set used for projection of requirements is very small.</p> <p>(b) There is a requirement to implement Open source Artificial Intelligence (AI) engine on IQMP to aid supply and logistics echelon and to draw accurate intelligence from extensive data using capability of AI.</p>
16.	Automatic synchronisation of Human Resource Management Suite (HRMS) and Integrated Quarter Master Package (IQMP) databases.	<p>(a) HRMS & IQMP exist at the Unit Level on separate servers. Both have separate Databases however, they access a host of common data fields. No provision exists for auto sync of both databases.</p> <p>(b) There is a requirement of automatic synchronisation of HRMS & IQMP databases at unit level to ensure high availability & accuracy of common database elements.</p>
17.	Android version of one module of HR system.	<p>(a) HRMS with its four modules is widely being exploited for Part II orders published through HR module. Portable version of HR module is unavailable for future implementation on mobile platform.</p> <p>(b) There is a requirement of developing an Android version of HR Module as a Proof of Concept (PoC) to explore deployability of HR module on android based mobile platform.</p>