The Commandant
Military College of Signals
Rawalpindi

Subject: <u>Post Visit Suggestions Open House 2013</u>

I would like to express my gratitude to your kind office and the authorities at MCS at large to have invited me to the Open House 2013. Overall, the quality of the projects was impressive and the event was well organized. I would like to congratulate the faculty and the support staff at MCS to have enabled the students to understand and comply to the projectised technical requirements.

I would also like to take the opportunity to approach your kind office with regards to some recommendations aimed at furthering the objectivity of the projectised activities at the undergraduate projects in particular and research projects in general. My recommendations are based on my extensive research in UG project conception, design, development and assessment in over 50 projects and critique of contemporary work at the international levels [1-3].

<u>Thematic Definition</u>
1. The UG project assignment committee may please identify, classify and declare the themes of the projects which are based upon the following criteria with an avid focus on local application and global viability (read: in order of priority) [4]. These themes, tools and technologies may be discussed on need-cum-basis at GHQ, HQ NUST, and definitively at the authorities level of MCS.
   - **21st Century themes** including but not limited to Autonomic Computing (read: FCAPS), Green Computing, Big Data and the like in CS & Software Engineering
   - **Communication frameworks & associated development technologies** such as RFID, NFC, DASH7, THz Oscillator Design, LTE, 3GPP, Crypt Analysis of Black and Grey traffic, GSM Localization, Google Apps, Android, Blackberry and IOS Apps etc.
   - **Simulation Frameworks** that necessarily abridge the gap between mathematical modelling and prototyping such as OMNET++, NS3, QualNet, TOSSIM etc.

<u>Sustainability and Local Development</u>
2. It is suggested that archival and retro-analysis of previously implemented projects may be performed through a Project Acquisition and Processing Committee (PAPC) empowered by CI and HoDs that executes data mining on the documentation of these projects and performs congenial interactions with the DSs who supervised the projects at MCS. Such a suite of activities is aimed at realizing a continuum of projects through sustained year-wise progression and development of projects in succession towards possible productization and avoiding unwitting resource exhaustion on redundant, repetitive and outdated research areas. The productization of the projects may be performed after a high-powered scrunity committee approves thereof. With a handful of productized projects, MCS may subsequently establish an in-situ Software Consultancy Services.

3. Through the participation of industry liaison office at MCS, the problems at hand in local settings may be identified and the students are provided a week-long expose' of the real settings and interaction with potential end-user (beneficiaries) of their projects. Before the students are made to embark upon the UG project undertaking, such exposure would allow them to appreciate formidable premise to better realize Software Development Life Cycle (SDLC). Some of the burgeoning problems that the undersigned can identify are Urban Sprawl Management, Digital Divide, Emergency Management, Social Homogeneity, Intelligent Transportation Systems etc.

4. Military projects of strategic levels which are at the back burner of the R&D departments of the armed forces may be modularized, obfuscated and assigned at the departmental levels at MCS through the involvement of relevant personnel in MoD, SPD, IGT&D and the like. Due to the nature of the projects, funding may be disbursed in accordance with the availability of the sponsoring agency.

Increased and timely involvement of Alumni body
1. The technical diversity and global presence of the alumni can we well harnessed through a well-documented appreciation and assessment of their technical strengths, current interests and potential participatory role in alumni activities. The collective wisdom and potential of the alumni can augment the in-house resources of MCS through their timely and active engagement in identification of the projects.
2. The alumni body may equally be engaged to help MCS come (read: with a civilian face) to contend for an influential and participatory role in the regulatory affairs of telecom sector, IT industry and software industry such as PASHA.

It is expected that the suggestions provided achieve the pedagogical goals of the UG projects with potentially tangible productization. I am hopeful that the sincere suggestions by an alumna would be given kind consideration.

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References

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