



Privacy & Security of Mobile Cloud Computing (MCC)

BIC Discussion Paper

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Introduction – need for INCO

- There is a need for a lightweight secure framework that provides security with minimum communication and processing overhead on mobile devices
- The security and privacy protection services can be achieved with the help of secure cloud application services
- In addition to security and privacy, the secure cloud application services provide the user management, key management, encryption on demand, intrusion detection, authentication, and authorization services to mobile users

Research challenges involved with the topic that require INCO:

- The proposed research would attempt to leverage the strengths of Mathematics and Electrical Engineering departments at IIT Delhi. As the threats to mobile devices are emerging and solutions to counter them are challenging, any collaboration with other International academic institutions on the proposed research would result in synergy of efforts.
- The Indian government has chosen mobile device as preferred platform to engage with citizens while offering various e-Governance services. Likewise there is huge market for mobile based e-Commerce applications.
- Our ability to convincingly address the security and privacy concerns of the growing Indian market using the experience and current research efforts of developed European member states can help us meet this social challenge.

Who are the stakeholders involved (and how best to mobilise them)?

- The collaborating research institutions in India and in developed countries would stand to gain by meeting the existing demand for secure and private transactions through a mobile device.
- At national level while boosting the economy of collaborating nation states, the security of the future mobile transaction would help us achieve the objective of a secure and safe Information Society.

- The stakeholders are being identified through personal interactions and any institutional support from European Commission would go a long way to reach the stated objectives faster.

State the benefits, and success metrics and need for INCO on topic:

- The collaborating research institutions in India and in developed countries would stand to gain by meeting the existing demand for secure and private transactions through a mobile device.
- At national level while boosting the economy of collaborating nation states, the security of the future mobile transaction would help us achieve the objective of a secure and safe Information Society.

Approach: What is approach to take: bi-lateral (country to country); multi-lateral (multiple countries); combination of both, and why?

- The challenge to secure mobile transactions from emerging threats is a multidisciplinary issue. The use of mobile devices for many sensitive transactions is growing in developed and developing economies alike.
- We need to address this challenge by engaging all stakeholders. A combination of bilateral and multilateral approach may emerge as we traverse the research path.

Timescales/ road mapping (what needs to be done and when it should be done):

The research may be undertaken in phases. The research plan and deliverables at end of each phase would need preliminary study by the collaborating agencies. A time line of 3 years for useful deliverables is considered realistic.

The full presentation can be found at http://www.bic-trust.eu/files/2012/10/Charturvedi_Mobile_Cloud_Security_BIC1.pdf



About the Author

Air Cmde **MM Chaturvedi** is a retired Indian Air Force officer. His PhD thesis in Information Security area is under review at IIT Delhi. He has about 35 years of experience in managing technology for IAF. An alumnus of National Defence College, New Delhi, he has held various appointments dealing with telecommunication policy issues. He graduated from Delhi College of Engineering and completed post graduation from IIT Delhi. Current interests include vulnerability analysis of evolving ICT infrastructure. Currently he is a visiting faculty at IIT Delhi and Ansal University Gurgaon, besides consultant at Beyond Evolution Tech Solutions Pvt. Ltd., India.