**NIST Big Data Working Group (NBD-WD)**

**NBD-WD-2013/M0064**

**Source: Security and Privacy Subgroup**

**Status: Draft**

**Title: Security and Privacy Subgroup Meeting Minutes for July 24, 2013**

**Author: Arnab Roy (Fujitsu), Nancy Landreville (U. of MD), Akhil Manchanda (GE)**

**Deliverables by September 27, 2013**

1. Big Data Use Cases for Security and Privacy
2. Big Data Security and Privacy Reference Architecture

**Action Items**

Seeking contributions on use cases from all verticals. Format:

* Vertical
  + List of scenarios
  + For each scenario, current method to ensure security and privacy
  + Gaps, if any
  + Current research on the topic (Can be filled in later)

**Use Case Example Draft – presentation by Roy Peter D’Souza, AlephCloud Systems**

PDF was sent to the subgroup mailing list

Health Information Exchanges (HIEs) aspire to facilitate sharing of healthcare information that might include Electronic Health Records (EHRs) such that they are accessible to relevant Covered Entities, but in a manner that enables Patient Consent. HIEs under construction tend to be federated, where the respective Covered Entity retains custodianship of their data, which poses problems for many scenarios such as Emergency. This is for a variety of reasons that include technical (such as interoperability) business, and security concerns. Cloud enablement of HIEs through strong cryptography and key management that meets the HIPAA requirements for PHI, ideally without requiring the cloud service operator to sign a Business Associate Agreement, would provide several benefits that would include patient safety, lowered healthcare costs, regulated accesses during emergencies that might include break the glass and CDC scenarios.

The talk discussed current approaches, proposed alternatives, proposed infrastructure for a proof of concept, proposed scenarios for validation and call to action.

**Use Case Example Draft – presentation by Babak Jahromi, Microsoft Corporation**Document uploaded to the NBD-WG input listing

Privacy requirements for Social Networking: Users interact with cloud-based social media services, generating large, fast and loosely structured Big Data that can be collected, aggregated and analyzed by cloud providers or their partners using Big Data techniques.

An essential characteristic of Big Data Analytics is the use of data to gain different insights or value than understood at the original time of collection. The Big Data analysis could result in extraction of aggregated information pointing to new trends, preferences, insight and behavior by a significant segment of the population. Such extracted information can then be made available to potential advertisers and others interested in such information for a fee.

This is a particular concern for data that concerns people, since later processing may also have a different impact on the data subjects than originally considered. Practitioners need normalized regulatory guidelines and common practices to allow them to work with the data responsibly and address privacy concerns about personally identifiable information in current or downstream use.

The talk discussed current solutions, big data characteristics and challenges.

**Key points from Big Data Security Conference, Boston, 17-18 July – presentation by Akhil Manchanda, GE**

Discussion of big data security categorized into four aspects: Architecture, Privacy, Forensics and Cryptography. Detailed notes will be provided soon.

**General Discussion**

* Security and Privacy topics can perhaps be split in 3 dimensions
  + Semantic Concepts, such as Data Privacy
  + Security Services, such as Communication Security
  + Techniques, such as Encryption and Signatures

**Web Minutes**

(11:03 AM) Marge Cole joined.

(11:04 AM) Roy DSouza (AlephCloud) disconnected.

(11:04 AM) Tim Zimmerlin (Automation Technologies) joined.

(11:04 AM) Orit Levin (Microsoft) joined.

(11:04 AM) Roy DSouza(AlephCloud) joined.

(11:06 AM) Babak\_Jahromi (Microsoft) joined.

(11:08 AM) Alicia Zuniga-Alvarado/Aza joined.

(11:14 AM) PavithraKenjige joined.

(11:16 AM) Orit Levin (Microsoft) disconnected.

(11:17 AM) Mark Underwood (Krypton Brothers): I am not a domain expert, but I have access to the HIMSS security and privacy toolkit from which we can mine some good use cases

(11:17 AM) PavithraKenjige disconnected.

(11:18 AM) Mark Underwood (Krypton Brothers): HIMSS = Healthcare Information and Management Systems

(11:18 AM) Mark Underwood (Krypton Brothers): Society

(11:18 AM) PavithraKenjige joined.

(11:18 AM) Orit Levin (Microsoft) joined.

(11:20 AM) PavithraKenjige disconnected.

(11:20 AM) PavithraKenjige19 joined.

(11:21 AM) Bob Marcus joined.

(11:21 AM) Orit Levin (Microsoft) disconnected.

(11:22 AM) PavithraKenjige19 disconnected.

(11:23 AM) Mark Underwood (Krypton Brothers): sorry, no working mic here

(11:23 AM) Babak\_Jahromi (Microsoft): Hi Arnab, I uploaded a Social Media Use Case yesterday. Could we dscuss that in this call?

(11:24 AM) Mark Underwood (Krypton Brothers): Also Microsoft Health is a cloud app that deals with a lot of these issues

(11:24 AM) Mark Underwood (Krypton Brothers): ack'd

(11:28 AM) Orit (Microsoft) joined.

(11:31 AM) Yuri Demchenko (UvA) joined.

(11:34 AM) Mark Underwood (Krypton Brothers): Yes, it is true - used to work with Nielsen Homescan.. it gets anonymized but so many demos are saved that you can easily infer the identity

(11:36 AM) Mark Underwood (Krypton Brothers): The NSA PRISM data is a good example; they collected "metadata" but you can grab another dataset and id the person

(11:36 AM) Orit (Microsoft) disconnected.

(11:39 AM) Roy DSouza(AlephCloud): Differential Privacy - Ilya Mironov, Cynthia Dwork

(11:52 AM) Orit Levin (Microsoft) joined.

(11:53 AM) Orit Levin (Microsoft) disconnected.

(11:57 AM) David Boyd (Data Tactics) joined.

(12:01 PM) Akhil Manchanda joined.

(12:02 PM) Yuri Demchenko (UvA) : we need to distinguish security services and security mechanisms

(12:04 PM) Yuri Demchenko (UvA) : e.g. confientiality is a service but it it is ensured by encryption, policy and access control

(12:06 PM) David Boyd (Data Tactics) disconnected.

(12:06 PM) Yuri Demchenko (UvA) : good

(12:06 PM) Mark Underwood (Krypton Brothers): Agree w/ importance of the reference arch

(12:08 PM) Doug Scrimager(Slalom Consulting) joined.

(12:12 PM) Yuri Demchenko (UvA) : NIST SP 500-299: NIST Cloud Computing Security Reference Architecture. http://collaborate.nist.gov/twiki-cloud-computing/pub/CloudComputing/CloudSecurity/NIST\_Security\_Reference\_Architecture\_2013.05.15\_v1.0.pdf

(12:14 PM) Doug Scrimager(Slalom Consulting)22 joined.

(12:14 PM) Doug Scrimager(Slalom Consulting) disconnected.

(12:20 PM) Doug Scrimager(Slalom Consulting)22: so far so good

(12:20 PM) Mark Underwood (Krypton Brothers): good stuff

(12:28 PM) Orit Levin (Microsoft) joined.

(12:28 PM) Orit Levin (Microsoft) disconnected.

(12:30 PM) Mark Underwood (Krypton Brothers): not on privacy, but were transparency and risk management addressed

(12:30 PM) Mark Underwood (Krypton Brothers): ?

(12:38 PM) Doug Scrimager(Slalom Consulting)22: I think that many security people are saying that shared data with the ability to audit against independant sources all with key pairs and checksums, etc are needed - no one source can be authoritative

(12:39 PM) Doug Scrimager(Slalom Consulting)22: so many sources of the same data that can be cross referenced

(12:41 PM) Doug Scrimager(Slalom Consulting)22: i.e. redundant sources of data

(12:41 PM) Doug Scrimager(Slalom Consulting)22: that an dependaing upon one source, i.e. DUNS to be authoritative is a single point of failure

(12:42 PM) Orit Levin (Microsoft) joined.

(12:47 PM) Mark Underwood (Krypton Brothers): What was said about risk management?

(12:48 PM) Mark Underwood (Krypton Brothers): Thanks - also did they address application certification for cloud?

(12:50 PM) PavithraKenjige joined.

(12:50 PM) Babak\_Jahromi (Microsoft) disconnected.

(12:51 PM) Mark Underwood (Krypton Brothers): ok

(12:51 PM) PavithraKenjige: Can you provide this document to the attendees

(12:52 PM) PavithraKenjige: About security .. you said if you provide the data another organisation ..

(12:52 PM) PavithraKenjige: you should not expect any security

(12:53 PM) Orit Levin (Microsoft) disconnected.

(12:53 PM) Jay Greenberg (Boeing) joined.

(12:54 PM) PavithraKenjige: you mean after you share the data, you should not expect any privacy

(12:54 PM) Deborah Blackstock (MITRE) joined.

(12:55 PM) Don Krapohl joined.

(12:55 PM) Tim Zimmerlin (Automation Technologies) disconnected.

(12:56 PM) Karen Guertler joined.

(12:56 PM) Wilco van Ginkel (Verizon & CSA) disconnected.

(12:56 PM) PavithraKenjige: thank you

(12:56 PM) Dan Bearden joined.

(12:56 PM) Roy DSouza(AlephCloud) disconnected.

(12:56 PM) Arnab Roy (Host, Fujitsu) disconnected.

(12:57 PM) Orit Levin (Microsoft) joined.

(12:57 PM) Keith Hare, JCC Consulting, Inc. joined.

(12:57 PM) Ashok Malhotra (Oracle) joined.