eHealth Focus Group
Assessment and Recommendations

November 2012

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The ATIS eHealth (eH-FG), Assessment and Recommendations is an **ATIS Work Plan** developed for the **Technical and Operations (TOPS) Council**.

This document is subject to change. This document is a product of the eH-FG, and represents the consensus view of the eH-FG members. However, nothing contained herein is attributable to any particular member of the eH-FG.

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Table of Contents

1 Executive Summary

1.1 Problem Statement

The effective application of Information and Communications Technology (ICT) to eHealth has the potential to revolutionize Healthcare. This can go far beyond the current trend of merely replacing manual record keeping and administrative tasks with computer based administration and eHealth sensor devices feeding local applications and databases. Problems with the current industry approaches include:

- Machine-to-Machine (M2M) and Internet of Things (IoT) have the potential to collect extensive data from sensors, but that data must still be analyzed/interpreted for the specific needs of each individual patient, as well as analyzed in aggregate for public heath trends, disease management, and ongoing research.
    - M2M and IoT can also enable the control of actuators for care and treatment; however, concerns over the impact of malfunctions and fear over liability is slowing the command & control aspect of eHealth applications.
- Cloud technology has the potential to enable new care models, but may be underutilized if it is only used as a replacement for in-house data processing/storage facilities. Health Provider process and even business models must be reexamined.
- A complex environment of government regulations and incentivized business models may produce change, but that change may be artificial and not a significant improvement over the already occurring general trend to replace paper forms and records with electronic forms and record keeping.
- ICT enabled data mining and correlation technology has the potential for improving health and wellness, but also may undercut the underlying trust and privacy requirements that are essential to effective patient-provider relationships if privacy rights are abused.

Addressing all of the above is far beyond the scope of this focus group. However, an attempt has been made to keep this bigger picture opportunity in place as the ultimate target, while smaller pragmatic and achievable steps are addressed in successive releases of this document.

1.2 Scope of Effort

A series of Provider Needs Assessments were used to focus the scope of the ATIS eHealth Focus Group (FG) effort. The Provider Needs Assessments consisted of a series of interviews with Service Providers to understand current issues they are facing with respect to eHealth. The result was to focus efforts on securing eHealth records (eHR) in the cloud.

In this document,

1. The primary area of analysis is eHR security in the cloud. Within this area, Trust and Identity mechanisms are explored in co-operation with the ATIS CSF.
2. Other areas are also captured, with an emphasis on privacy and security; including sensor, gateway, and network aggregation related issues that may impact work of other ATIS initiatives (e.g., Cybersecurity FG, the Unifying Client Architecture FG, and M2M Committee). This assessment is to provide a more complete view of end-to-end privacy, trust and security integrity.

1.3 Assessment and Conclusions

The current approach to eHealth security is fragmented and complex, particularly when it is examined in a complete end-to-end perspective. This is illustrated throughout this report as “approach A”. This report