TELECOMMUNICATIONS INFRASTRUCTURE ADVISORY BOARD

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SUBJECT: DRAFT INTRODUCTION AND SCOPE

STANDARDS INTERPRETATION DOCUMENT SID003

WIRELESS NETWORK INSTALLATION PRACTICE AND SAFETY

The following text is the draft Introduction and Scope prepared by the Project Leader, Steve Smith, as a precursor to the "Call For Interest" within the wider membership of the TIA-B.

INTRODUCTION

Wireless network installations are prevalent with WiFi 'zones' in almost every public space. Corporate and public sector organisations are growing increasingly dependent on their wireless networks to support and enhance their operation and/or to provide services to their customers and clients by providing a range of services including Internet access, Voice over IP services, manufacturing process monitoring, IP CCTV and alarms. Radio frequency identification (RFID) tags are also being used via wireless networks to track stock, assets, vital medical equipment in hospitals, and even children within the confines of a campus.

With personal safety and business operation at risk it is vitally important for wireless networks to be stable and reliable. In contrast, many potential users deem wireless networks to be too unreliable and insecure - often the result of past bad experience. Also, recent controversy regarding exposure to radio frequency emissions has caused concern for some, and in some instances has led to networks being shut down as a safety precaution. How can the same wireless networks deployed to protect human life and enhance many businesses cause such fear and concern regarding safety, security and reliability for others?

Wireless network problems are generally due to a combination of lack of planning, inadequate or non-existent RF survey and poor installation - factors that also affect the safety of the installation. Wireless networks are inherently more complex than fixed media networks, so care and attention to detail is essential to achieve a stable and reliable installation.

This Telecommunications Infrastructure Advisory Board SID contains interpretation of published standards covering best and safe practice for wireless network installation in the 2.4 GHz and 5 GHz frequency bands. Aspects of wireless installation to be addressed include planning, survey, physical installation, configuration, power management, channel allocation, security and maintenance.

The SID takes account of the European Directive 2004/40/EC and provides:

- users with the confidence to know when their installation has been installed effectively;
- consultants with the information required to specify a wireless installation and to verify the installation against the relevant standards;
- installers with a guide through the relevant standards to enable them to install wireless networks safely, effectively and efficiently and to protect them from potential future litigation.

The specific standards subject to interpretation within the document are:

- BS 6701:2004;
- EN 300 328, 301 893 and 300 440;
- IEEE 802.11 standards family;
- ISO/IEC TR 24704.

This document provides interpretation of published standards which is intended to be submitted to checking and endorsement by the BSI Technical Committee, or equivalent, responsible for the production of the standards that are subject to TIA-B interpretation.

TELECOMMUNICATIONS INFRASTRUCTURE ADVISORY BOARD

SCOPE

This Telecommunications Infrastructure Advisory Board SID contains interpretation of the following published standards:

- BS6701:2004;
- EN 300 328, 301 893 and 300 440;
- IEEE 802.11 standards family;
- ISO/IEC TR 24704.

The SID will cover best and safe practice for wireless network installation in the 2.4GHz and 5GHz frequency bands including the following topics:

- planning - applicable standards and key parameters for surveys and installation;
- surveying - strategies to meet design objectives and standards compliance including selection of antennae for internal and external networks;
- physical installation - access points, antennae, inter-building bridge links, mesh radio installations, antennae poles, masts and guying;
- configuration - safe working and standards compliance in the following areas:
  - power management;
  - channel allocation;
  - security;
- maintenance - techniques for initial benchmarking, operational monitoring and preventive maintenance procedures.