

 **Name: Mazhar saleem**

 **id :14455**

 **subm to: sir ghassan**

**Q1: internet draft?**

A n s : link <https://www.ietf.org/rfc/rfc2026>

Internet-Drafts:

 During the development of a specification, draft versions of the

 document are made available for informal review and comment by

 placing them in the IETF's "Internet-Drafts" directory, which is

 replicated on a number of Internet hosts. This makes an evolving

 working document readily available to a wide audience, facilitating

 the process of review and revision.

 An Internet-Draft that is published as an RFC, or that has remained

 unchanged in the Internet-Drafts directory for more than six months

 without being recommended by the IESG for publication as an RFC, is

 simply removed from the Internet-Drafts directory. At any time, an

 Internet-Draft may be replaced by a more recent version of the same

 specification, restarting the six-month timeout period.

 An Internet-Draft is NOT a means of "publishing" a specification;

 specifications are published through the RFC mechanism described in

 the previous section. Internet-Drafts have no formal status, and are

 subject to change or removal at any time.

Q1B:

Proposed Standard:

 The entry-level maturity for the standards track is "Proposed

 Standard". A specific action by the IESG is required to move a

 specification onto the standards track at the "Proposed Standard"

 level.

 A Proposed Standard specification is generally stable, has resolved

 known design choices, is believed to be well-understood, has received

 significant community review, and appears to enjoy enough community

 interest to be considered valuable. However, further experience

 might result in a change or even retraction of the specification

 before it advances.

 Usually, neither implementation nor operational experience is

 required for the designation of a specification as a Proposed

 Standard. However, such experience is highly desirable, and will

 usually represent a strong argument in favor of a Proposed Standard

 designation.

 The IESG may require implementation and/or operational experience

 prior to granting Proposed Standard status to a specification that

 materially affects the core Internet protocols or that specifies

 behavior that may have significant operational impact on the

 Internet.

 A Proposed Standard should have no known technical omissions with

 respect to the requirements placed upon it. However, the IESG may

 waive this requirement in order to allow a specification to advance

 to the Proposed Standard state when it is considered to be useful and

 necessary (and timely) even with known technical omissions.

**Draft Standard:**

 A specification from which at least two independent and interoperable

 implementations from different code bases have been developed, and

 for which sufficient successful operational experience has been

 obtained, may be elevated to the "Draft Standard" level. For the

 purposes of this section, "interoperable" means to be functionally

 equivalent or interchangeable components of the system or process in

 which they are used. If patented or otherwise controlled technology

 is required for implementation, the separate implementations must

 also have resulted from separate exercise of the licensing process.

 Elevation to Draft Standard is a major advance in status, indicating

 a strong belief that the specification is mature and will be useful.

 The requirement for at least two independent and interoperable

 implementations applies to all of the options and features of the

 specification. In cases in which one or more options or features

 have not been demonstrated in at least two interoperable

 implementations, the specification may advance to the Draft Standard

 level only if those options or features are removed.

 The Working Group chair is responsible for documenting the specific

 implementations which qualify the specification for Draft or Internet

 Standard status along with documentation about testing of the

 interoperation of these implementations. The documentation must

 include information about the support of each of the individual

 options and features. This documentation should be submitted to the

 Area Director with the protocol action request. (see Section 6)

 A Draft Standard must be well-understood and known to be quite

 stable, both in its semantics and as a basis for developing an

 implementation. A Draft Standard may still require additional or

 more widespread field experience, since it is possible for

 implementations based on Draft Standard specifications to demonstrate

 unforeseen behavior when subjected to large-scale use in production

 environments.

**Standard:**

 A specification for which significant implementation and successful

 operational experience has been obtained may be elevated to the

 Internet Standard level. An Internet Standard (which may simply be

 referred to as a Standard) is characterized by a high degree of

 technical maturity and by a generally held belief that the specified

 protocol or service provides significant benefit to the Internet

 community.

 A specification that reaches the status of Standard is assigned a

 number in the STD series while retaining its RFC number.

**Q3:**

Issues:

**Connectivity issues:**

 It can be maddening when you find that you can’t connect to your wireless network. Worse still, the causes of connectivity issues can be complicated and come from deep within your IT infrastructure. With CORE, you can get professional help to diagnose and correct the problem. That gets you back online faster, and with a lot less stress.

Security issues:

 When you transmit sensitive information over wireless networks, it automatically becomes more vulnerable. Wi-Fi makes things more convenient, but it brings with it important security concerns. Working with a professional can help you safeguard your network from a whole range of potential security threats.

Network Expansion issues. Wi-Fi networks are more sensitive than you may realize. Sometimes the addition of one extra user can bog down an entire network. Using managed wireless solutions, you can efficiently grow the size of your wireless network when you hire new employees or take on new projects.

**Access Point issues:**

One access point or router may not be enough for your whole company. CORE can help you calculate exactly how many access points you need for everyone to get optimum performance.

**Mobility:**

The current Internet, designed for stationary end-hosts, does not handle mobility easily within the Internet architecture. The issue of mobility relates to handling changes in location and underlying network connectivity of mobile end-systems at each protocol layer. Note that in this paper, we focus on host mobility. Network Mobility (NEMO) (RFC 3693, 2005), or site mobility, is out of scope of this paper. However, some of the techniques for host mobility can be extended to support network mobility and site mobility as well.

**Multihoming:**

In the past, most hosts/nodes or computers had only one networking interface. Hosts stayed within one network with one egress path. However, multi homed hosts or devices having multiple networking interfaces are becoming more common. Additionally, users may be multi homed too. Each user can be reached through many different hosts, such as computers, PDAs (Personal Digital Assistant), and cellular phones. We call this user multi homing. Finally, the network that users reside in may have several egress paths as well. This is the so-called site multi homing. All these use the multi homing functionality to support fault-tolerance, load sharing and/or load balancing, and traffic engineering.

**Routing Scalability:**

A common solution for IP network sites to allow changing their service providers is to use Provider Independent (PI) addresses. However, these addresses are not aggregable and lead to an exponential increase in size of the routing table in Default Free Zones

(DFZs) (RFC 4984, 2007).

**Deploy ability:**

Deploy ability of new mechanisms is an extremely important factor. The literature is rife with examples of technically superior proposals that have seen limited or no deployment in the real world owing to the lack of a proper and practical deployment plan.

**CURRENT AND FUTURE CHALLENGES:**

**Using New Spectrum Wisely:**

We have outgrown the radio spectrum we use for wireless communication. Fortunately, in 2020 we will see growth in the use of new frequency bands. First, we’re going to see high frequencies, from about 30 to about 60 GHz, called “millimeter wave” rolled out for mobile data communications (5G) and as an extension of Wi-Fi (802.11ay).

Signals in these short wavelengths can be pointed by antenna arrays with high directionality, which improves spectrum use by limiting interference between devices. There’s a challenge in improving how radios do signal acquisition and tracking for these focused beams. Assuming we succeed at optimizing our use of mm Wave, the next band of terahertz frequencies provides even greater directionality.

**Maximizing Performance:**

Wireless today is very fast, but performance falls off considerably in complex or crowded environments. If a sporting arena wanted to provide every person in every seat with their own customized augmented-reality experience, we couldn’t do it efficiently today. (However, there are creative proposals, such as putting a wireless access point under every attendee’s seat, which is both cost-prohibitive and would lead to interference issues.)

**Networks that Know Themselves:**

In a few years, literally billions of new wireless devices will come online. How should each wireless network treat each new device as it connects? Some devices will need lots of bandwidth. Some will require ultra-low latency. Some will be battery-power-limited. Some may be malicious. It is surprisingly challenging for network admins to know what is even on their networks. Not all devices identify themselves. Malicious devices can lie about what they are. Furthermore, as more traffic becomes encrypted (as it should be for security) identification becomes even harder.

**Network as Sensor:**

We can use wireless networks for more than just data transfer. Network devices are constantly painting their environments with radio waves; how those waves are reflected back provides useful information about the environment.

Today, we can use various techniques to geolocation devices indoors, where GPS doesn’t work: We collect data based on received signal strength, time-of-flight, and angle-of-arrival to estimate the location of various devices relative to indoor APs. Improving the accuracy, frequency, and scale of estimating indoor locations can open up many applications, like autonomous indoor robots.

**Radios as Software:**

There are fascinating engineering challenges ahead in the field of software-defined radios (SDRs) and cognitive radio. Rather than having to engineer all the advancements I discussed above into new radio hardware, and worry about them quickly becoming outdated, we may be able to add capabilities to our wireless systems through software updates – just like we update our smartphones today. As new spectrum or encoding methods become available, we could update existing devices in place.

**Q2:**





