

Letter of Motivation

Application for membership of the Second Security, Stability and Resiliency of the DNS (SSR2) Review Team

Applicant: Geoff Huston

My motivation to apply as a volunteer member of this review team is based on my engagement in the DNS area as a measurement researcher, and my desire to see the Domain Name System operate with appropriate levels of integrity, robustness and performance.

The name system of the Internet is based firmly on the ubiquitous use of the DNS. We have grown accustomed to referring to resources and services on the Internet by using URL tags, with the implicit assumption that each DNS name can be used in a consistent manner that refers to the same resource or service irrespective of the relative context of the users of the name. The proper, efficient and robust operation of the DNS is essential to a functioning and useful Internet. It is also evident that the role of the DNS is not one that can be statically defined. The DNS continues to evolve with changes in query mechanisms through EDNS, changes to label handling with the evolution of IDNs, and changes to the query patterns with the work on DNS privacy standards and DNSSEC. As well as these technology-inspired evolutionary pressures, there is also the issues relating to the widespread use of the DNS as a command and control channel for various forms of malicious traffic.

ICANN has a number of roles in this space, as it is one of the entities that jointly administer the root zone of the DNS, as well as operating the L-Root anycast constellation of root name servers, as well as being the facilitator for various community-driven processes that have resulted in the opening of the root zone for further generic top level domains. Operationally, it also collaborates with the other root zone instance operators, the gTLD and ccTLD operators. ICANN host a number of community-driven processes that has an influence on registry / registrar operational practices.

I am keen to see ICANN adopt positions and follow practices that preserve the utility and functionality of the DNS and reflect our best understanding of how to operate the Internet's name system. As we have seen over the years, there are many pressures that could fragment the public Internet by creating schisms in the DNS, and I am keenly interested to see ICANN taking a stance that resists such destructive pressures.

I can bring to this review team a long standing experience with the DNS. I was an IAB-nominated member of the IAHC group in 1996 and 1997 that made the initial proposals to open up the generic top level name space. More recently I have been studying various aspects of the DNS structure, including the level of use of DNSSEC, the level of support for various cryptographic algorithms for DNSSEC, the issues relating to the use of IPv6 as a transport protocol for DNS queries and responses, the use of TCP, and the distribution and use of resolvers in today's Internet. I am also a member of the ICANN Security and Stability Committee, and have been actively engaged in a number of work parties related to the

operation of the DNS. I have analytical skills that have been developed through an extensive period as a researcher operating in the field of measurement and analysis.

I have been an active member of the numbers community, serving on the executive council of APNIC for a number of years and more recently working as a staff member of APNIC undertaking research into number and name issues. I have a strong understanding of multistakeholder community processes and am experienced in balancing technical imperatives with the broad spectrum of motivations and expectations that are expressed in community-based activities. I am very familiar with the approaches used by the numbers community to protect the number registry and its contents from various forms of abuse, while still allowing the registry to be a useful tool to underpin the integrity and security of the Internet's routing system. I understand that a similar set of tensions are at play in the names registries. That does not imply that the registry operational approaches used by the numbers community would necessarily be directly applicable to the name space in attempting to address these issues, but there is a certain level of common experience that can and should be applied to a review of the name space and the name registries.

I am also acutely aware that this is an activity that is subject to continuing evolutionary pressures, and am aware of the consequent need to provide some stability to existing operational and business practices, while at the same time provide breathing space to innovation and change. In this respect I am always ready to learn, and apply this knowledge through contributions to community-driven processes.