

CONTRACTOR'S QUARTERLY PROGRESS, STATUS AND MANAGEMENT REPORT
1 July 2012 - 30 September 2012

DOMAIN NAME SYSTEM SECURITY (DNSSEC)
DEPLOYMENT COORDINATION

Contract No: FA 8750-10-C-0020

Data Item A001, CLIN 0002

Submitted by:

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Progress Against Planned Objectives (3.1.1)

- Steve Crocker continued work as Chairman of an FCC Working Group on DNSSEC Deployment
 - Continued work on phase 2 of the Working Group report.
- Continued final revisions and input new Roadmap.

Technical Accomplishments This Period (3.1.2)

1. Set up an machine running a variant of elv dns server named "report.shinkuro.com" The machine will be sitting on the internal network with an external interface but only port 53 will have any services on the external interface.
2. Created a delegation of the name fccgrade.shinkuro.com to with report.shinkuro.com as the only nameserver. Once the machine is up and running, querying for whatsmyip.fccgrade.shinkuro.com A or TXT will return the external address of the machine sending the request. Query for *.report.fccgrade.shinkuro.com TXT will return the message "Thank you" and write the query name to log ALL. Almost all other queries will get NXDomain reply, there are some class HS that will get answers.
3. As part of the DNSSEC initiative, we developed a validating stub resolver, vsResolver, written in python. The vsResolver code implements the Domain Name System Security Extensions specified in RFC 4033, 4034 and 4035 that add data origin authentication and data integrity to the Domain Name System in a simple scripting language. vsResolver can be used as a python library or as standalone code. vsResolver could be part of a solution for the DNSSEC last mile problem - a validating stub resolver executing locally on a machine and providing validated DNS answers securely. The vsResolver code is further described at <https://www.dnssec-deployment.org/index.php/2012/02/dnssec-validating-stub-resolver-vsresolver/>. Source code for vsResolver is available at <https://sourceforge.net/projects/vsresolver/>. The source code includes over 400 validation test cases. The source code has been downloaded over 127 times since it was released in February 2012.
4. Created a port of the yadifa authoritative nameserver from EURid which supports DNSSEC that runs under OpenWRT on a low cost Buffalo router. This nameserver is complementary to the unbound recursive resolver that we have previously ported to OpenWRT and Netgear and Buffalo routers and brings the ability to both serve DNS names authoritatively and validate name resolution on low cost hardware. This could be a way to solve the problem of the "last mile" in validation and could provide small office/home office establishments with authoritative DNSSEC name server hardware at low cost.
5. Started a dialogue with ICANN registrar community to make DNS and DNSSEC information flow between Child and Parents more robust and

flexible. This resulted in the formation of a small task force to gain understanding of the issues on both sides and help formulate approaches to address the issues.

Improvements to Prototypes This Period (3.1.3)

None this period

Deliverables This Period (3.1.5)

(See Technical accomplishments, above)

Publications This Period (3.1.7)

None this period

Meetings and Presentations This Period (3.1.8)

- DNSSEC Deployment Coordination Meetings were held at Shinkuro's offices on July 10, August 7, and September 18.
- Initiated cooperative effort with the Internet Society's Deploy360 Programme to collaborate on outreach for DNSSEC. This resulted in the scheduling of monthly conference calls with the community. The first call was September 18, 2012.
- DNSSEC briefing to the Financial Services group BITS on September 27, 2012
- Steve Crocker and Olafur Gudmundsson attended the IETF meeting in Vancouver, Canada, July 29 – August 3
- Steve Crocker spoke to the Technology Policy Institute Forum, Aspen Colorado, August 19 – 21.

Issues or Concerns (3.1.9)

None at this time.

Planned Activities (3.2.1), Information Covering the Next Three Months

- Coordination meetings are scheduled for October 23rd, November 13th, and December 11th at Shinkuro.
- Steve Crocker and Olafur Gudmundsson will be attending the ICANN meeting in Toronto, October 14 – 18.
- Olafur Gudmundsson will be attending the IETF Meeting in Atlanta, Georgia November 4 – 9.