

NASA Request for Comments on Modem Link Property Advertisement

THIS IS NOT A NOTICE OF SOLICITATION. IT IS A REQUEST FOR INFORMATION (RFI) ONLY.

Send information/literature/qualification statement no later than June 1, 2011 to the email or postal address as provided herein. NASA does not intend to award a contract based on this information. This RFI is to seek interest and participation in developing a standard method and associated protocol to enable routers and applications to autonomously adjust to changing radio characteristics.

Devices and associated applications are increasingly connected to a variety of smart modems that have dynamically varying link characteristics. For example, incoming and outgoing link rates can be varied over time with adaptive coding and modulation to suit the channel characteristics. In addition, those links may go up and down due to a variety of factors. The link rate and conditions offered by the modem to connected devices and associated applications therefore vary. In order to autonomously condition traffic, a form of cognitive networking, and get the most out of the modem's link capacity, the upstream devices and applications need to be informed of the modem's link conditions.

A number of potential solutions have been proposed oriented toward router/modem interactions:

- RFC-5578, PPP over Ethernet (PPPoE) Extensions for Credit Flow and Link Metrics
- Dynamic Link Exchange Protocol (DLEP) (draft-ietf-manet-dlep-00)
- Link properties advertisement from modem to router (draft-wood-dna-link-properties-advertisement-01)

These solutions do not necessarily address devices and associated applications that may be multiple network hops away from the modem. The problem definition is contained in document, "Modem Link Property Advertisement", that has been placed on the Web for easy access and be obtained at the following URL:

(http://roland.grc.nasa.gov/~ivancic/papers_presentations/2011/Modem_LPA.pdf).

Whereas NASA is a consumer rather than a producer of smart modems, and has experienced the need to have applications dynamically adjust to downstream radio characteristics, NASA is seeking interest in collaborating with modem and router producers to develop a standardized solution.

Submittal Instructions:

1. Please send relevant literature and information to: E-mail address:
william.d.ivancic@nasa.gov NASA-Glenn Research Center Attn: William D. Ivancic
M/S 54-1 21000 Brookpark Road Cleveland, OH 44135-3191 (216) 433-3494

2. Such information shall include electronic file in either text, Microsoft Word, PDF or Postscript (PDF is preferred) with your comments. As part of your information package, please include company Technical Point(s) of Contact including address, telephone number and e-mail address.

3. The information received from this RFI is expected to be used by NASA and determine whether or not there is sufficient interest to standardize on a solution and if so, to establish a working group to develop a solution. Those wishing to keep their responses confidential should state so at the beginning of their response with such wording as “Confidential or Limited distribution. Please do not disclose outside of the US Government.”

THIS RFI IS ISSUED SOLELY FOR INFORMATION AND PLANNING PURPOSES.

THIS SYNOPSIS SHALL NOT BE CONSTRUED AS A COMMITMENT BY THE GOVERNMENT, NOR WILL THE GOVERNMENT PAY FOR THE INFORMATION SOLICITATED. RESPONDERS WILL NOT BE NOTIFIED OF ANY REVIEWS RESULTING FROM THIS RFI.

Point of Contact

Name: TBD

Title: Contract Specialist ?

Phone: ???

Fax: ???

Email: ???@nasa.gov