Glenn Ricart
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Brief Bio

Glenn Ricart is the Founder and Chief Technology Officer of US Ignite, a nonprofit organization with a mission to create an ecosystem of innovative applications in smart and connected communities leveraging emerging technologies. Technologies of special interest include wired and wireless gigabit to the end user, software-defined locavore infrastructure, software-defined performance engineering, and privacy and security through virtual infrastructure slicing. Dr. Ricart is also Adjunct Professor in the School of Computing at U. of Utah.

Previously, Ricart was CEO of National LambdaRail, Managing Director of PricewaterhouseCoopers, Executive Vice President and CTO of Novell during its heyday in the 1990s, Assistant Vice Chancellor and academic CIO of the University of Maryland, and Program Manager at DARPA. He has also founded or co-founded five startups. His early work on the Internet has led to his induction into the Pioneer's Circle of the Internet Hall of Fame.

Research Directions and Related Testbed Infrastructure Requirements

US Ignite will be coordinating the implementation of a Metropolitan SDX in at least 15 American Cities as part of its recent NSF grant, and can contribute sets of pragmatic issues that need to be resolved in the construction of the Metropolitan SDXes and suggestions for research directions that would improve the SDXes.

These include:

- Matching or translating or emulating or transforming characteristics across connections made by the SDXes including possible:
  - Engineered service quality
  - Control plane communication methods, protocols, and parameters
  - Economics including spending limits and time-of-day limitations
  - Re-metering and/or re-timing flows
  - Changing security encapsulations or slice membership
- Inclusion of user-specified "transformer" code to facilitate the above
- Economics – who pays and on what basis?
- Mutual authentication and authorization of connections
- Specification of the engineered services needed
- Ability to shutdown or rate-limit unwanted flows
- Highly reliable SDXes (non-stop in the face of any "n" failures)
- Wired to wireless SDX transformations
- Distributed SDXes
- Spontaneously formed SDXes (the SDX equivalent of ad hoc meshes)

Travel reimbursement is requested.