

ONR/MURI Briefing and Demonstration on Building Interactive Digital Libraries of Algorithmic Knowledge

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Outline – Progress since May 2002

1. FDL prototype
fundamental concepts (article, notes)
architecture – navigator
new material – PVS proofs, Logic of Events
2. Critical Infrastructure Protection/Software (CIP/SW)
basic rationale for role of FDL
protocol verification experience
Logic of Events
Hybrid protocols (demo later)
3. Demonstrations
active documents
basic algorithmic mathematics
4. Administrative changes arising from May report
 - Activities:
 - community building (MKM, QPQ, NSDL)
 - summer meeting in Ithaca
 - post-May reviews – unclear beyond summer meeting
 - Web page:
 - major additions in 2002 – FDL manual and prototype
 - relationship to Nuprl site
 - new Web page in response to Jan 21, 2003 request
 - Communications with ONR:
 - July 2002 Annual Report
 - October 1, 2002
 - January 21, 2003
 - need communication protocol

1. FDL Prototype

- **Fundamental concepts**
 - Stuart Allen article
 - Stuart Allen design notes
- **Architecture**
 - refer to quad chart
 - navigator manual
- **New material**
 - PVS proofs in FDL
 - Logic of Events
- **Web projection**
 - design goals
 - technical challenges
 - demo illustrations

2. CIP/SW

- Rationale for FDL

capability = prover * database

example of hybrid protocol work, verification
at pace of design

- Role of Nuprl, PVS in program verification
- Role of MetaPRL compiler effort

3. Demonstrations

- Nuprl Web page
- Math Libraries

basic math

hybrid protocols

4. Administrative

- Pre-briefing notes
- Activity arising from May 22 report
 - community building efforts:
 - MKM
 - NSDL
 - QPO
 - summer meeting – 2 days on Open Math
 - PVS theories added to FDL
 - post-May reviews – unclear obligations beyond summer meeting
- Web page
 - major additions in 2002
 - relationship to host PRL pages
 - new organization based on Jan 21, 2003
 - email critique from R. Wachter
 - articles – 18 on Web site
 - student progress:
 - 1 Phd grad
 - 4 supported (2 near completion)
- Communications with ONR
 - need better protocol on urgent ONR requests
 - need more project input beyond required reports