Using WWW to improve software development and maintenance
Application of the LiGHT system to ALEPH programs.

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Contents

• Documentation for Software Development
• The LIGHT Solution
• A Demonstration
• Requirements and Technology
• Status and Future Projects
The Problem

- Size
- Complexity
- Distribution
Handling the Size

- JULIA Manual: 25 Klines, 28 p
- ALEPH DDL: 110 Klines, 1221 p
- JULIA Code: 402 p
- BOS Banks: 226 p
- ADAMO Manual: 283 p
- JULIA Help Guide: 40 p
- BOS Manual: 360 p
- ALEPHLIB Help Guide: >1000 p
- CERNLIB Manual: 25 Klines, 28 p

Documentation for Software Development
Handling the Complexity

Documentation for Software Development

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Handling the Distribution

ALEPH: 600 scientists and engineers
30 institutes
12 countries
Requirements and Technology

- **Conversion to HTML**
  Ability to convert source code, text and graphics

- **Genericity**
  Ability to easily add new converters

- **Automatic Cross-Connection**
  Ability to connect several documents with hypertext links

- **Configurability**
  Ability to configure the connectivity, depending on the kind of application

- **Incremental Update**
  Easy update of a document, without needing a reconversion of all other documents
Design of LIGHT

Source Documents

- F77
- LaTeX
- OMT

F77 Parser
LaTeX to HTML
OMTool Parser
LIGHT Dictionaries

LIGHT Generator

Configuration

LIGHT Solver

WWW browser
WWW Server
Web

C++ Parser
Web Maker

Requirements and Technology
The LIGHT Dictionary

Requirements and Technology

LIGHT Dictionary

Module
- contains

File
- includes

Object
- contains

Token
- contains

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The LIGHT Generator

- Takes as input the LIGHT Dictionaries and the Source Documents
- Splits the Original Documents into smaller pieces
- Generates HTML Markup and Hypertext Links
- Is Driven by a Configuration Program

In MODULE “JULIA Source Code”, link
TOKENS of NAME $1 and of TYPE “Routine Call” to
TOKENS of NAME $1 and of TYPE “Routine Description”
in MODULE “HBOOK Reference Manual”
Further Projects

• Extend LIGHT to Interactive Access to Physics data

• Develop new LIGHT Parsers (e.g. C++)

• Allow HTML Generation “on the fly”

• Couple LIGHT with Software Development Tools
  - Source Code Managers (e.g. CVS),
  - Programming Environments (e.g. SNIFF),
  - CASE Tools (e.g. Rational ROSE) ...

• Work towards Collaborative Software Development
Conclusion

- LIGHT improves reading and navigation in JULIA
- The LIGHT architecture is applicable to other software projects
- LIGHT can be coupled with software tools