THtml

- THtml will generate >=1 doc.root file
- .html pages generated from doc.root files by April (Feb doesn't exist)
- Bertrand: extract doc for online help
  - interface already discussed
  - THtml will load doc on demand, return doc string
  - works even for links

Non-LLVM

- Keep CINT, Reflex, Cintex as is
- Fix relevant bugs that can be fixed <1 week
- Fix Coverity reports

LLVM: Words (Reminder)

- LLVM: the whole thing, compiler + optimizers + JIT + platform support etc
- clang: LLVM's C++ frontend with C++ interface, to be used by:
- cling: planned as clang-based C++ interpreter
- rootcling: ROOT module to interface cling (and thus clang) from ROOT

LLVM + clang + cling

General plans:

- No announcements

- Small LLVM-ROOT interface in $ROOTSYS/llvm, default: --disable-llvm

- Goal: replaces
  - rootcint, genreflex / GCCXML
  - dictionaries (stubs, member info etc)
  - ACLiC
  - interpreter

LLVM Priorities

1. Estimate libCling size, check platform independence (Windows)

2. Replacement for genreflex + dictionary
   - check feasibility
   - benchmark (build and run time, dict size)
   - exercise full path: header, dict, TClass

3. Replacement for rootcint
   - should be almost free (Linkdef)

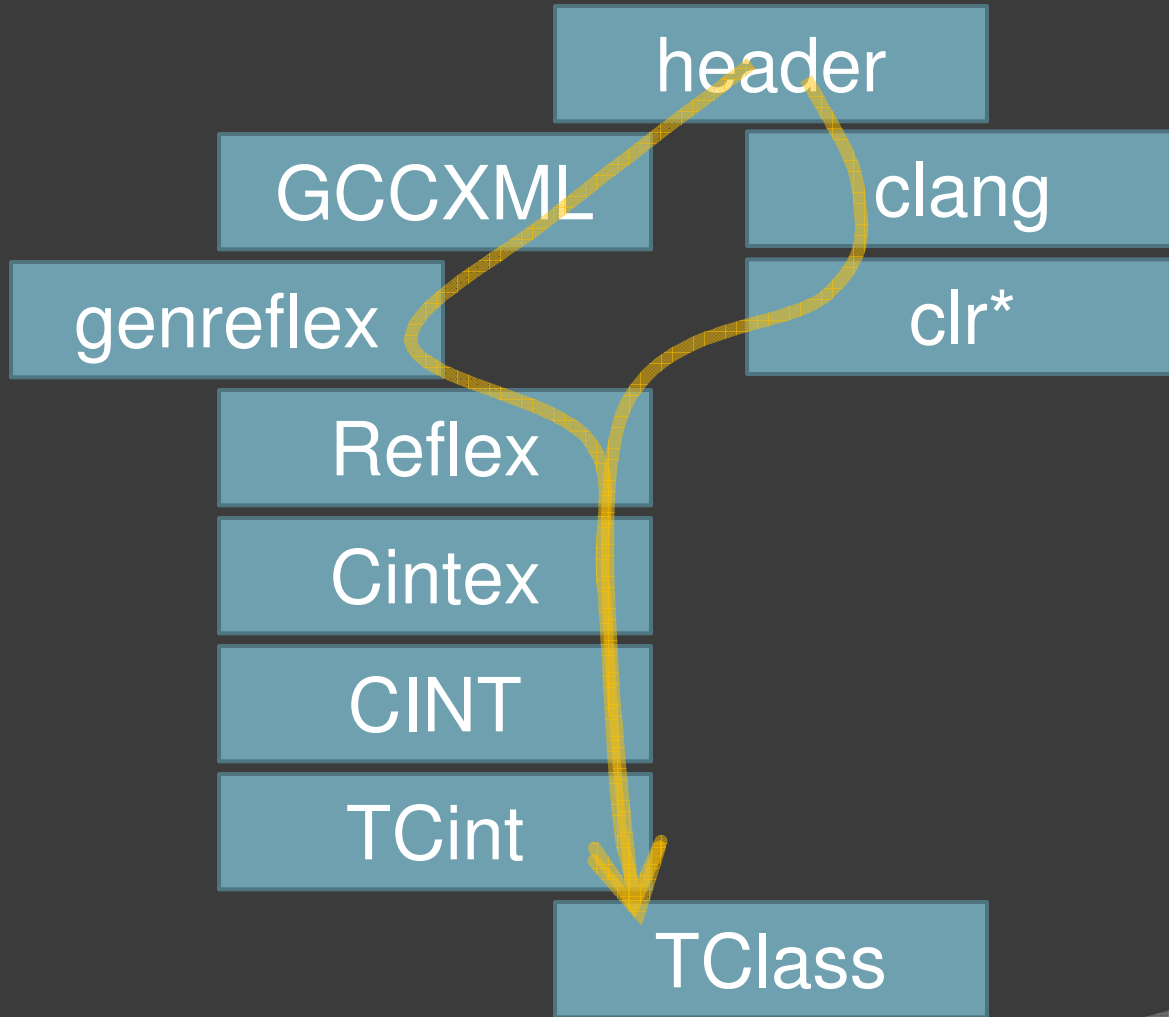4. Interpreter: later! ACLiC: later!

Quick LLVM Dictionary

- parse headers using (modified) clang
- put into PCH, register PCH in G__Foo.cxx so it gets loaded
- Fill data into Reflex when loading library
- Generate wrappers on demand (JIT)

```
"const char* wrap1234(vector<void*>p) {\n
    ((TObject*)p[0])->GetName();}"
```

clang can now parse itself (.h + .cpp), parses 93.7% of ROOT's headers

Q'n'D LLVM Dictionary

header

GCCXML   clang

genreflex   clr*

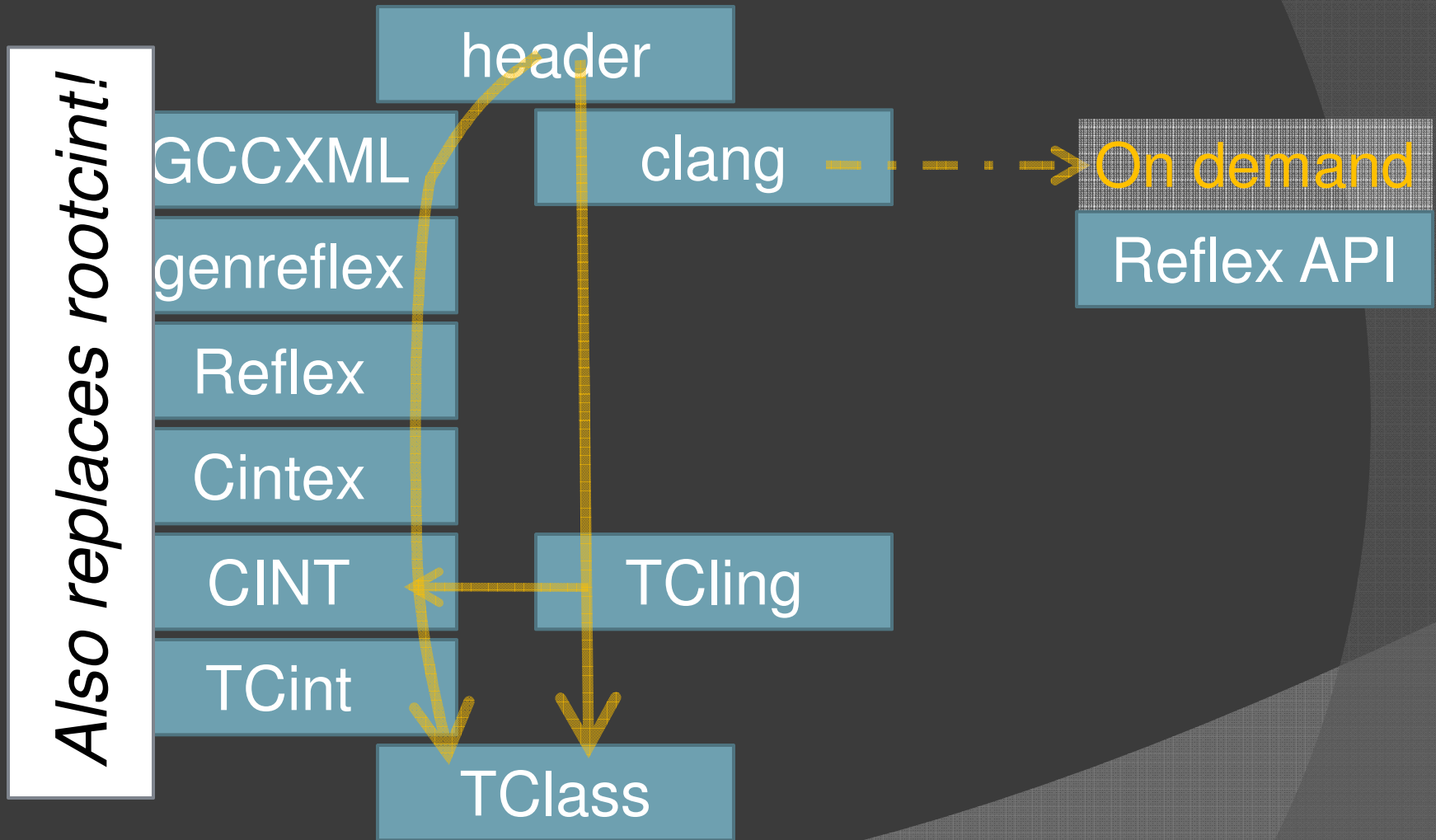Reflex

Cintex

CINT

TCint

TClass

*: by Zdenek

Full Clang Dictionary

- Before replacing rootcint

- Replace TCint by TCling, but keep TClass: use clang's type database instead of G__struct to feed TClass etc

- Problem: at this point we have no cling interpreter yet, need to copy data in clang type database to CINT; interpretation still through CINT

Full Clang Dictionary

Also replaces rootcint!

header

GCCXML

clang

On demand

genreflex

Reflex API

Reflex

Cintex

CINT

TCling

TCint

TClass

Timeline

- With FNAL's help!

- get library size; test drive on Windows by end of March

- genreflex/GCCXML replacement ("q'n'd LLVM dictionary") by July

- Full clang dict (TCling, CINT forwarding, no Reflex-API adaptor yet) by December

- TS working on cling (i.e. interpreter / ACLiC) starting May / June?