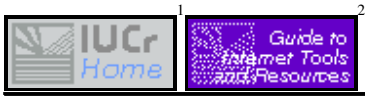

W3 Addressing

URI – Uniform Resource Identifiers

URI[3] is the fundamental addressing[4] technology on the web. It is extensible, includes a number of existing addressing schemes and allows the incorporating of new ones over time. URI is the generic set of all names/addresses that are short strings that refer to objects. Two main forms of URI can be used: URL and URN.

URL – Uniform Resource Locator

URL[5] is an extension of the file name concept from the unique computer on the whole network. The specification of a document includes beside the usual path and file name also server address and transfer method (protocol) description:

```
method://server[:port]/path/file name
```

The optional elements of URL are included in brackets [ ]. Inside of a document, all links to the other documents on the same remote computer can used in the form of a partial URL and include only path and/or file name.

Common URLs are:

- *Hyper Text Transport Protocol URL* allows the use of the native W3 protocol for document transfer:
  - `http://vsibm1.mpi-stuttgart.mpg.de/grin/mypage.htm`
- *File URL* describes files or directories on servers:
  - `file://mycomputer/news/yesterday.txt`
  - `file://mycomputer/oldnews/`
- *Remote file URL* to address an ftp server
  - `ftp://ftp.savba.sk/pub/w3vlc/crystal.index.html`
- *Newsgroup URL* using the NNTP transfer protocol:
  - `news:sci.techniques.xtallography`
- *E–mail URL* to send messages
  - `mailto:Howard.Flack@cryst.unige.ch`
- *Gopher URL* allows to address a gopher server on a selected computer. The default value for the gopher port is 70 but in case the server uses another port, it should be written explicitly written in the URL:
  - `gopher://999.999.99:88/`
- *Telnet URL* serves to start a telnet session:
  - `telnet://grin@vsibm1.mpi-stuttgart.mpg.de`

URN – Uniform Resource Name

URN[6] can be:

[1] http://www.iucr.ac.uk/iucr–top/welcome.html
[2] int.index.html
[3] http://www.w3.org/pub/WWW/Addressing/URL/URI_Overview.html
[4] http://www.w3.org/pub/WWW/Addressing/
[5] http://www.ncsa.uiuc.edu/demoweb/url–primer.html
[6] http://union.ncsa.uiuc.edu/HyperNews/get/www/URNs.html

- Any URI which is not a URL. The following are examples of URNs:[7]
  - `urn:hdl:cnri.dlib/august95`
  - `urn:lifn:some.domain:anything-goes-here`
  - `urn:path:/A/B/C/doc.html`
  - `urn:inet:library.bigstate.edu:aj17-mcc`
- A particular scheme[8] which is currently under development by the IETF, which should provide for the resolution using internet protocols of names which have a greater persistence than that currently associated with internet host names or organizations.

Remarks for Crystallographers

In terms of a crystallographer's work and needs, a **URN** is much akin to the common literature reference that one finds in scientific papers, *e.g.*
Bernardinelli, G. and Flack, H.D. (1985). *Acta Cryst.* **A**41, 500–511. Least–Squares Absolute–Structure Refinement. Practical Experience and Ancillary Calculations.

The URN is hence a time–invariant and situation–invariant method of making refernce to a document source. It does not at all tell you exactly where and when and under what conditions one particular person can access this information. To read the above paper one needs road street information of the type that the library is on the third floor of a building at such and such a location, is open from 8am to 5pm, Acta Cryst. is on the fifth shelf on the left, *etc.*. This is typical **URL** directions. The definition of URN addressing and the means of interconnecting URNs and URLs is of vital importance to the future of electronic publishing in science. Crystallographers would be well advised to take an interest in this area!

An extensive bibliography of addressing techniques[9] is provided by the W3C.

[Index][10] – 19th July 1996 – © Yuri Grin[11] – **Not to be copied or reproduced without permission**

[7] http://www.dlib.org/dlib/february96/02arms.html
[8] ftp://www.ics.uci.edu/pub/ietf/uri/index.html
[9] http://www.w3.org/pub/WWW/Addressing/URL/9_References.html
[10] int.index.html
[11] mailto:grin@vsibm1.mpi–stuttgart.mpg.de