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# The MDRS langroot

(multilingual distributed referential system)

*J-F C. Morfin*  
*INTLNET*

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***This presentation introduces a multi-year effort and active strategy for an operational Multilingual Internet by way of usage, permitted by:***

- ***a granular vision of the networks model***
- ***an optional, interoperable, technology transparent variant use of the Internet and of the convergence, using a Multilingual Distributed Referential System (MDRS)***
- ***an advanced language integration and support.***



the networks of the network of networks



Analysis shows that the Internet is the

- o concatenation of a global continuity [*L. Pouzin*]
- o partitioned into relational spaces.

At each structural layer:

- o infrastructure: operators, extranets
- o superstructure: intranets, externets
- o metastructure: TLDs, spaces of exchanges.

*The MDRS is a metastructure layer project.*



## relational spaces



*Relational spaces may result from:*

- o different architectures and technologies.*
- o personal, national, lingual, cultural, economic, professional, and local interests.*

*80% of human interests are local.*

- o Their root name (TLD, area code ...) identifies their class of users, group of hosts, registry, referential centre, and governance [R. Tréhin].*



## identity, universality, and subsidiarity



A relational space must be empowered via the control of its community governance on its own reference centre ("local IANA")

- o to describe itself by itself, in its own vernacular
- o for an equal access to the global continuity
- o and a standalone governance in mutual respect and cooperation with others (intergovernance)

Balkanization results from not pre-empowering naturally pre-existing relational spaces.



## an INTLFILE evolution



IntInet was created in 1978 to support the IPSS deployment via the empowerment of public and private relational spaces through:

- o reference information provision
- o governance projects catalysis
- o intergovernance assistance

The MDRS project is a state of the art evolution of its INTLFILE daily information service.



## The suggestion of ICANN



The “uni-authoritative” IETF/IAB vision supports multi-authority needs through options that may not scale well. Ex. IDNA.

ICANN ICP-3 suggests the testing of a multi-authority evolution. A two-year long community test project along with its reporting follow-up validated the concepts at the basis of the MDRS:

- ULD (user level domain). Ex. Chinese DN
- root matrix, authoritative by TLD intergovernance
- multi-authority must be architectural to scale.



## **multilingual distributed referential system**



The MDRS project is a technology transparent distributed network of interoperable registries,

- o using the same concepts (metastructure)
- o permitting each relational space to maintain an interlinkable description of its own reality and common references (computable ontologies)
- o with an unlimited thematic scope that results in an ontology “open forest”.





## MDRS architecture



The MDRS architecture includes:

- o root meta-registries + IT management tools
- o referent servers and users' context resolvers
- o interlinking protocol and solutions
- o an inter-operating system for the provision of reference information based services.

Three main roots will document the MDRS' own structure, used languages and networking.



## networked language



New major language modes are to be supported:

- o screened mode: script is just a parameter
- o computable mode: text processing
- o networked mode: polylogue dominant
- o abbreviated modes: SMS
- o etc.

A language is a linguistic relational space **brain to brain/CPU multichannel protocol** that is (will be) identified by an algorithmic multimode signature.



## globalization plus harmonisation



- o A multilingual system must address the 'e-bias': the Internet and computers are 'English inside'.

This can be achieved via a two-layer strategy:

- o **globalization**: internationalizes the net and localizes its ends. It offers interoperability.
- o **an harmonisation** path to multilingualisation ensuring every language the same local and global empowerment and interintelligibility as English globalization does for English.



## registries interoperability



There are many language codes in a few languages:

- o MDRS language definition removes subjectivity.
- o root must be a multilingual cross-reference.

“unitags” are ISO 11179 metadata IDs including:

- o a universal sub-address (databases, IPv6)
- o a cloud of associated lingual names and aliases
- o a status-date-origine stamp
- o qualified interlinking support.



## interoperable interlinking



Alpha langroot “langtags” cross-reference the various ISO 639 tables and drafts, Linguasphere, other tables and computer languages.

- o Interoperability must be at two levels:
  - **ISO 11179 conformance** (JTC1/SC32/WG2) via a direct protocol or a registry porting
  - **conceptual interoperability**. Source constraints may break it. An intermediary source may then restore it.



## the langroot structure



The langroot is a main roots in the MDRS forest.  
Its langtags fluidly describe its:

- o classes: languages, sources, modes, etc.
- o registries: script, charset, glyphs, etc.
- o items: language, location, architexter, etc.

They can be chained much like domain names and point to a unique langtag per lingual space.  
Registries and Contexts can mutually inherit.

- o *The target is set at 20,000 lingual spaces by the end 2006.*



## INTF and MLTF



The MDRS roots are community open projects:

- o extending the referent functions locally
- o enabling cross-technology usages
- o empowering linguistic communities

INTLNET is the secretariat of two Task Forces:

- o INTF: MDRS and Network Architecture
- o MLTF: language issues



Thank you



Thank you for your attention.

PDF: <http://intl.net.org/itunesco.ppt>

Written notes: <http://intl.net.org/itunesco.pdf>

MDRS Introductory Draft: <http://intl.net.org/mdrs.pdf>