

# URI Scheme Registration Problem Statement draft-thaler-uri-scheme-reg-ps-01

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# RFC 4395 defines guidelines and procedures (same in draft-ietf-iri-4395bis-irireg)

Four categories of schemes:

- Registered: Permanent (req'd for Stds Track), Provisional, Historical
- Unregistered: Private

Goals of IANA registry:

- 1) Discover names and defining docs
- 2) Discourage collisions
- 3) Discern conventions and avoid confusion with existing schemes
- 4) Encourage registration via low bar for Provisional

Importantly, all goals assume majority of schemes get registered

# URIs not just for the web

- RFC 3986 (URI syntax) explicitly allows for wide use
- “A resource is not necessarily accessible via the Internet”
- “does not place any limits on the nature of a resource, the reasons why an application might seek to refer to a resource, or the kinds of systems that might use URIs for the sake of identifying resources.”
- “abstract concepts can be resources, such as the operators and operands of a mathematical equation, ... or numeric values”

# App-specific schemes increasingly common

- Windows, iOS, Android all allow custom app-specific schemes
  - Associated app launched when URI accessed (clicked or invoked via API)
  - Supported across form factors (PC, phone, etc.)
- URIs becoming a form of inter-process communication
  - `myapp://some/args/here/or?here`
- Potentially already orders of magnitude more than currently registered schemes
  - Various other sites (e.g., Wikipedia) have other lists
  - Result is that ***our stated goals are not being met***

# Problem 1: Lack of incentive to register

- No guidance on when to use “Private” vs Provisional
- Low bar for Provisional is still much higher than “Private”
  - Cost is: Effort, time delay, churn based on feedback, disclosure
  - Benefit is: Lowering risk of collision
    - Making doc discoverable not usually seen as a benefit by registrant
  - Contrast our process with Wikipedia’s...
- Impact is:
  - People sometimes ignore URI syntax guidelines
  - Collisions can happen, e.g. two apps can use “myapp” with differing syntax
    - User chooses which one, but might get invalid “args” to the “API”, may not be well tested

# Problem 2: Current process doesn't scale well

- RFC 4395 ambiguous whether Provisional requires 4-week list review
  - IRI WG agreed it doesn't, just 2-week expert review, but not doc'ed
- Current expert review likely couldn't handle the load if the current uses actually tried to register
  - In 2012 we did an experiment simultaneously registering (as 3<sup>rd</sup>-party) >75 schemes listed on Wikipedia
  - Review resulted in adding warning re unknown security impact of 1 scheme
  - After 2 weeks, IANA registered them due to timeout (per RFC 4395)

# Problem 3: Current private scheme guidance causes conflicts

- “Organizations that desire a private name space for URI scheme names are encouraged to use a prefix based on their domain name, expressed in reverse order. For example, a URI scheme name of com-example-info might be registered by the vendor that owns the example.com domain name.”
- Hyphens in domain names: foo.bar.example and foo-bar.example
- “For example” is unclear whether to use hyphen or dot
- Guidance doesn’t protect against collision with registered schemes (“iris.beep”, “xcon-userid”, etc.) especially with new gTLDs
  - .xcon or .iris, anyone?
- Most custom schemes aren’t following reversed name guidance

# Summary

- Current goals not being met
  - Do we change the goals or change the process or both?
- Do we really want majority of schemes to be IANA registered?
  - If yes, how do we scale?
  - If no, how do we discourage collisions and syntax guideline violations?
- How should we deal with Wikipedia (etc.) lists going forward?