



# Registry Event **2023**



# .UK EPP Standardisation

Nominet Product Team

# Re-cap on timeline of standards.

- 1996: Nominet launched utilising our PGP email based 'Automaton'.
- 2003: Nominet altered the registry lifecycle from auto-renew to auto-delete on expiry.
- 2004: Industry standardised first versions of EPP in RFCs including auto-renew lifecycle.
- 2008: Nominet launched 'Nominet EPP'.
- 2009: Industry refined and updated EPP RFCs.
- 2012: Nominet revised 'Nominet EPP' moving towards but stopping short of the 2009 EPP standards including variable registration periods.
- 2014: Nominet launched .CYMRU and .WALES on a new standard EPP platform which has since supported other registries with varying business processes.
- 2014: ICANN appointed Nominet as an Emergency Backend Registry Operator for gTLDs.
- 2015: The 'Automaton' was withdrawn as a method of domain management in .UK; update notifications continue today, references in error messages remain automaton related.
- 2021: Nominet introduced status fields from the EPP standards.
- 2022: Nominet revised our expiring domains process and introduced some concepts from EPP RFCs.
- 2023: The underlying registry for .UK remains rooted in an evolution from the 1996 Automaton.

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# Standardisation – the basics.

- Our proposals impact both EPP and Web Domain Manager – we will continue to support both.
- There are a number of areas where .UK solves problems in a very different way from the majority of the industry primarily because the solutions were scoped, planned and implemented in parallel by disparate sets of people across the industry.
- From the point we first implemented EPP back in 2008 there has been criticism that our approach is non-standard but our approach was anchored in compatibility to the automaton software and process developed in 1996.
- We have been reviewing our approach to determine whether our unique approach has benefits that justify remaining non-standard or whether we should standardise.
- We concluded that we want to explore standardisation with registrars.

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# Standardisation does not mean uniformity.

- As a Registry Services Provider (RSP) we have operated a range of different top level domains for Registry Operators with varying business processes, with some variance in EPP elements supported but ultimately compatible with the industry standard approach and processes.
- Our .CYMRU, .WALES and RSP business have helped us learn a lot about the complexity of the environment registrars and registrants are experiencing today when they register in more than one top level domain.
- Standardisation is attractive to remove the niche complexities related to .UK where they do not add significant value.
- Difference where it adds real world measurable value remains very attractive to make .UK the number one choice.

# Re-cap on Standardisation proposals

- Last year we proposed aligning the .UK registry with the rest of the industry *where that is appropriate*.
- We have received a good range of feedback for our proposals including:
  - Registrar Round-table call
  - Nominet community forum
  - Direct feedback from registrars
  - UKRAC
- Our proposals were well received. However, feedback shows reasonable concerns about the devil in the detail.
- We still want to hear feedback as we develop the detail.
- After this process there will be a need for a policy process.

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# Re-cap on Standardisation proposals

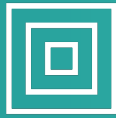
Area of proposals	Current status
General EPP restrictions	Revised and updated based on feedback. More feedback wanted.
Use of DELETE command	Merged into .UK lifecycle proposals. More feedback wanted.
AUP removal for Investigation Lock	Not yet updated, expect more questions to come.
Inter-Registrar Transfer Process	Revised and updated based on feedback. More feedback wanted.
.UK Lifecycle	Revised and updated based on feedback. More feedback wanted.
Tag Types	Not yet updated.
Terminology	We expect to only update this again as each section is finalised.
What we have heard	We have attempted to capture what we have heard within a summary document too.

# Publishing updated documents

- What we have heard: if you have views not captured, please let us know.
- .UK Standardisation – General EPP.
- .UK Standardisation – Lifecycle.
- .UK Standardisation – Inter-registrar transfer protocol.

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# General EPP restrictions

# General EPP – we propose:

- **Increase the granularity of the timestamps in .UK EPP**  
(i.e. include fractions of a second, 2023-01-04T14:11:32.238Z)
- **Enable all registrars to utilise EPP as the primary protocol for querying the registry and enable visibility of data via EPP where the data is not private.**
- **Update the behaviours around each of the EPP object types:**
  - Domain
  - Host
  - Contact

# General EPP – Domain object (1/3):

EPP Field	Description of field	Sponsoring Registrar	Non-sponsoring registrar
<b>domain:name</b>	The registered domain.	Yes	Yes
<b>domain:roid</b>	The unique repository object identifier for the domain object.	Yes	Yes
<b>domain:registrant</b>	The contact object ID that defines the registrant of the domain.	Yes	No; unless a correct auth code is supplied for the domain.
<b>domain:status</b>	Lock settings and pending delete status.	Yes	Yes
<b>domain:ns</b>	Any nameservers linked to a domain.	Yes	Yes
<b>domain:host</b>	Any sub-ordinate host objects for the domain stored in the registry.	Yes	No; unless a correct auth code supplied.
<b>domain:crID</b>	The EPP login ID for that created the domain. (essentially the TAG that created it).	Yes	Yes
<b>domain:clID</b>	The EPP login ID that controls the domain. (essentially the TAG).	Yes	Yes
<b>domain:upID</b>	The EPP login ID that last updated the domain. (essentially the TAG that updated it).	Yes	Yes
<b>domain:crDate</b>	The create date of the domain.	Yes	Yes

# General EPP – Domain object (2/3):

EPP Field	Description of field	Sponsoring Registrar	Non-sponsoring registrar
<b>domain:upDate</b>	The update date of the domain.	Yes	Yes
<b>domain:exDate</b>	The expiry date of the domain.	Yes	Yes
<b>domain:trDate</b>	The last transfer (of registrar) date of the domain.	Yes	Yes
<b>domain:authinfo</b>	A unique auth code for the domain.	No	No
<b>rgp:rgpstatus</b>	The RFC3915 Registry Grace Period status.	Yes	Yes
<b>domain-ext:auto-bill</b>	The number of days before every expiry that the registrar wishes to automatically trigger a renewal.	Covered in other parts of our proposals.*	
<b>domain-ext:next-bill</b>	The number of days before the next expiry that the registrar wants to trigger a renewal.	Covered in other parts of our proposals.*	
<b>domain-ext:renew-not-required</b>	A plain text field.	Covered in other parts of our proposals.*	
<b>domain-ext:reseller</b>	A field that contains a resellers reference to link the reseller data for a domain.	We propose modernising our reseller implementation.	
<b>domain-ext:notes</b>	Registrar free text notes.	We propose removing this field.	



# General EPP – Domain object (3/3):

- Reseller extension – we propose modernising our .UK reseller functionality to utilise RFC8543 Organisation mapping and RFC8544 Organisation extension.
  - At a later date this would enable utilising the same structures to store and update registrar related data too via EPP.
- In .UK we only accept registrant contacts on domains and we have no intention of starting to utilise any other contact types ourselves. We would like to understand if there is a real world use case where a service for registrants to have Admin, Technical and/or Billing contacts published for third parties would be valuable?

# General EPP – Host object:

EPP Field	Description of field	Sponsoring Registrar	Non-sponsoring registrar
<b>host:name</b>	The current host name.	Yes	Yes
<b>host:roid</b>	The unique repository object identifier for the host object.	Yes	Yes
<b>host:status</b>	Lock settings and link status.	Yes	Yes
<b>host:addr</b>	Any IP address glue records.	Yes	Yes
<b>host:crID</b>	The EPP login ID for that created the host. (essentially the TAG that created it).	Yes	Yes
<b>host:clID</b>	The EPP login ID that controls the host. (essentially the TAG).	Yes	Yes
<b>host:upID</b>	The EPP login ID that last updated the host. (essentially the TAG that updated it).	Yes	Yes
<b>host:crDate</b>	The create date of the host.	Yes	Yes
<b>host:upDate</b>	The update date of the host.	Yes	Yes
<b>host:trDate</b>	The last transfer (of registrar) date of the host.	Yes	Yes

We propose to enable host objects in .UK to have more than one IPv4 and more than one IPv6 glue record address at the same time in line with the EPP standard.

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# General EPP – Contact object (1/3):

EPP Field	Description of field	Sponsoring Registrar	Non-sponsoring registrar
<b>contact:id</b>	The contact ID.	Yes	Yes
<b>contact:roid</b>	The unique repository object identifier for the contact object.	Yes	Yes
<b>contact:status</b>	Lock settings and link status.	Yes	Yes
<b>contact:postalinfo</b>	Contains a range of fields: <ul style="list-style-type: none"> <li>• contact:name</li> <li>• contact:org</li> <li>• contact:addr <ul style="list-style-type: none"> <li>○ contact:street</li> <li>○ contact:city</li> <li>○ contact:sp</li> <li>○ contact:pc</li> <li>○ contact:cc</li> </ul> </li> </ul>	Yes	No; unless either a valid auth code is provided for the contact object or an individual field has contact:disclose set to disclose.
<b>contact:voice</b>	The telephone number of the contact.	Yes	No; unless either a valid auth code is provided for the contact object or the individual field is set to disclose.
<b>contact:fax</b>	The fax number of the contact.	Yes	No; unless either a valid auth code is provided for the contact object or the individual field is set to disclose.
<b>contact:email</b>	The email address of the contact.	Yes	No; unless either a valid auth code is provided for the contact object or the individual field is set to disclose.

We propose to enable the provision of both ASCII (or Internationalised form) and Unicode (or Localised) postal info as per the EPP standard alongside each other.

# General EPP – Contact object (2/3):

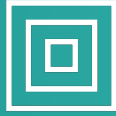
EPP Field	Description of field	Sponsoring Registrar	Non-sponsoring registrar
<b>contact:crID</b>	The EPP login ID for that created the contact. (essentially the TAG that created it).	Yes	Yes
<b>contact:clID</b>	The EPP login ID that controls the host. (essentially the TAG).	Yes	Yes
<b>contact:upID</b>	The EPP login ID that last updated the contact. (essentially the TAG that updated it).	Yes	Yes
<b>contact:crDate</b>	The create date of the contact.	Yes	Yes
<b>contact:upDate</b>	The update date of the contact.	Yes	Yes
<b>contact:trDate</b>	The last transfer (of registrar) date of the contact.	Yes	Yes
<b>contact:authinfo</b>	A unique auth code for the contact.	No	No
<b>contact:disclose</b>	Contains the status of disclose or not for each of: <ul style="list-style-type: none"> <li>• contact:name</li> <li>• contact:org</li> <li>• contact:addr</li> <li>• contact:voice</li> <li>• contact:fax</li> <li>• contact:email</li> </ul>	Yes	Yes

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# General EPP – Contact object (3/3):

- We propose to stop auto-duplicating data from contact:name to contact:org fields.
- We propose that all registrars will have the same access to update all details within a contact object with a requirement that they do so only at the request of the registrant.
- We have not yet taken a view in regard to the former historical automaton fields available on a contact; as we need to dig further into what it means as a registry and registrar to know your customer (KYC) which is also intertwined with our existing Data Quality processes. Those fields are:
  - Trading name
  - Organisation type
  - Organisation number



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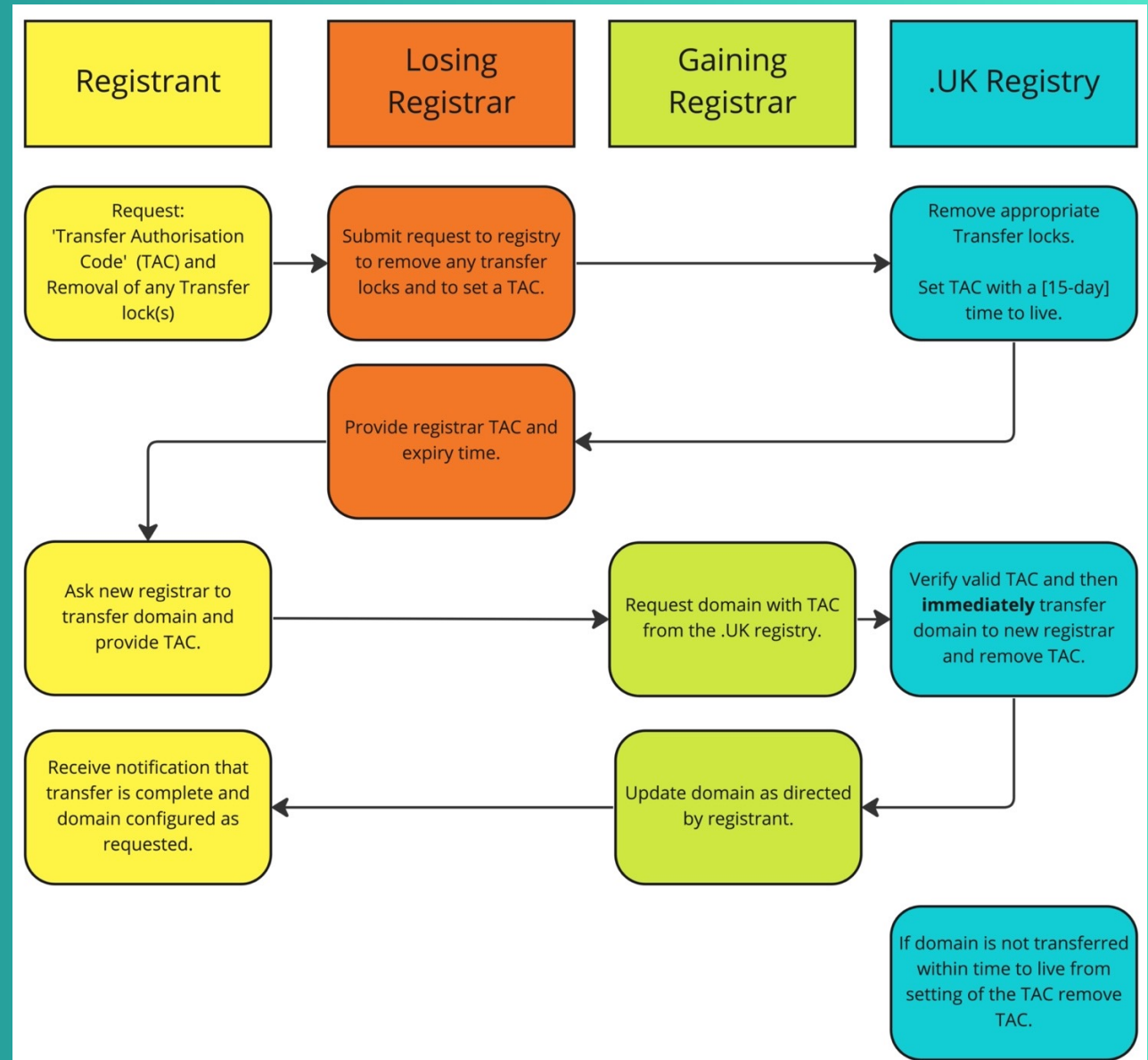
# Inter-registrar Transfer process

# Proposed transfer process

- We proposed to move from a push to a pull inter-registrar transfer process, this was well received by some but worried other registrars.
- Some registrars expressed that one of the best things about .UK in comparison with other registries was the speed of transfer and that slowing it down would be problematic for customers.
- We have now updated our proposed process with a new balance covering security, contracting certainty and speed.

# Proposed transfer process

- Propose change to a PULL transfer process using a Transfer Authorisation Code
- BUT the transfer process will be instant when the gaining registrar submits the request.
- To provide sufficient security around transfer; the losing registrar will be required to provide the Authorisation Code to the registrant and remove any transfer locks – these actions put the losing registrar on notice of the registrants request to change provider. The code will have a time to live, we propose 15 days.
- Transfers will not require renewal of the domain; registrars are free to upsell renewals at any time (up to a maximum expiry time of 10years in the future) including at the point of transfer.
- Post-create, update and transfer the domain will be immediately eligible for transfer.





# Proposed transfer process – backstop

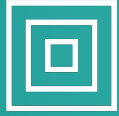
- We propose Nominet will offer a dispute process if a losing registrar does not follow their obligations, the result of which can include the unlocking of a domain and supply of authorisation code to the registrant.
- We considered proposing for a registrant to just being able to just obtain a Transfer Authorisation Code directly from Nominet without it being the result of a dispute process.
- We concluded that in doing this it would let registrars who are not meeting their obligations to support their customers and provide authorization codes to continue to impact the experience of other registrants without Nominet's oversight.
- We think that a light touch and streamlined dispute process can ensure that wider issues with service to registrants can be identified earlier.

We are keen to understand registrar views on the appropriate back stop mechanism.

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# Proposed transfer process – disputes

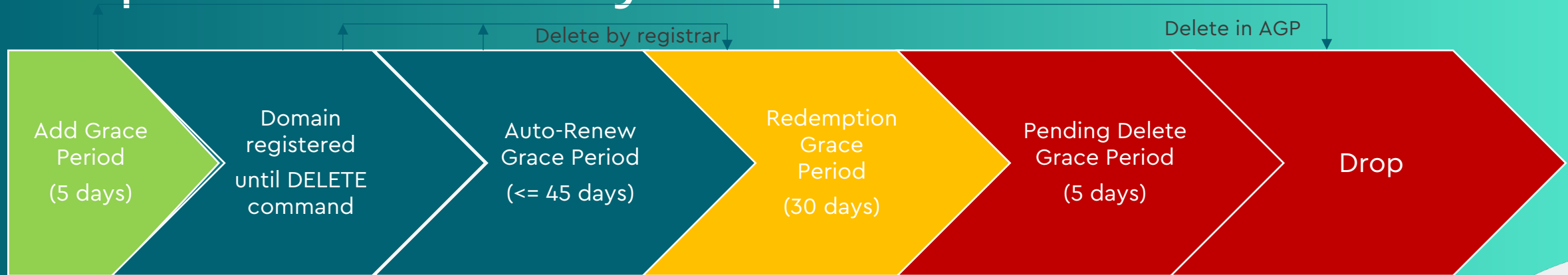
- We propose having a dispute process that can be utilised by a registrant or registrar where a domain name may have transferred providers without the appropriate authorisation from the original registrant.
  - In some circumstances, such as compromised credentials at the registrar, it could be possible that a domain was transferred without due authorisation. In such cases a bad actor may have transferred between multiple registrars in a short period of time to obfuscate the facts around ownership.
  - In gTLD industry this is mitigated through the use of transfer locks that impact both good and bad actors.
  - We propose having a dispute mechanism in which the legitimate registrant or owner can instead re-gain control of their domain and that will be investigated and enforced by Nominet as the registry operator.



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Lifecycle

# Proposed .UK lifecycle process



Domain is fully functional until registrar issues a DELETE command.

Registrar issues a DELETE command starting a 30-day **RFC3915 Redemption Grace Period**.

Domain has an **RFC5731** status of **pendingDelete**.

Domain no longer functions in the DNS.

Domain appears on drop list.

Precisely 30 days after DELETE command, grace period moves to **RFC3915 pending Delete period**.

Domain has an **RFC5731** status of **pendingDelete**.

Domain does not function in the DNS.

Domain appears on drop list.

No longer possible to renew domain.

Precisely 5 days after pending Delete grace period started available for re-registration.

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# Lifecycle

- Some registrars have legitimate concerns about the change from auto-delete to auto-renew process in a mirror of the 2003 change to auto-delete.
- We have some straw man proposals for registrar feedback targeted specifically at this issue.
- Common to the 3 straw man proposals is the following starting scenario:
  1. At the timestamp of a domain's expiry the expiry date will wind forward 1 year.
  2. An 'auto-renew period' will be shown on the domain.
  3. The auto-renew period' will last 45 days.
  4. During an auto-renew period a registrar can convert the auto-renew to a manual renew or further renew the domain for a longer period.

# Lifecycle – straw man option 1 “per registrar”

1. Registrars will be able to configure their tag to either:
  - i. 'Auto-renew domains'; or
  - ii. 'Auto-delete domains at the end of the Auto-renew period'. (Mimicking the current behaviour. Note: delete in this sense is entry into a redemption period not the final purge).
  
2. At the end of the auto-renew grace period if the domain has not been deleted by the registrar, then for registrars who have chosen to:
  - i. 'Auto-renew domains':
    1. The 'Auto Renew Period' will be removed.
    2. The auto-renewal transaction will be finalised and added to the next invoice.
  - ii. 'Auto-delete at end of Auto-Renew Period' (i.e. Expiry + 45 days):
    1. An automatic delete command will be issued, and the domain will enter RFC3915 'Redemption Period'.
    2. Two transactions will appear on the registrar's next invoice:
      - a. An auto-renewal transaction.
      - b. A refund of the auto-renewal transaction.
  
3. If a registrar utilises the 'Auto-delete domains at end of Auto-Renew Period' configuration, then they must submit a renew command with the old expiry date before the end of the 'Auto Renew period' to avoid interruption of the DNS. The web domain manager interface will allow registrars a simple option for this.

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# Lifecycle – straw man option 2 “per domain”

1. Registrars will be able to configure their tag settings so that at a default set of 'EPP Status' fields for domains created and/or transferred to their tag.
2. Any domains that are created on or transferred to the registrar's tag will at that point in time have the EPP statuses applied by the registry systems.
3. Registrars will be free to change the EPP statuses on a domain-by-domain basis.
4. We would extend the meaning of our implementation of 'clientRenewProhibited' which currently only prevents a manual renewal command to include prohibiting the finalisation of an auto-renew period.
5. At the end of the auto-renew period then:
  - i. Any domains which do not have clientRenewProhibited set will:
    1. Have the 'Auto Renew Period' removed.
    2. The auto-renewal transaction will be finalised and added to the next invoice.
  - ii. Any domains which do have clientRenewProhibited set will:
    1. Have an automatic delete command issued, and the domain will enter RFC3915 'Redemption Period'.
    2. Two transactions will appear on the registrar's next invoice:
      - a. An auto-renewal transaction.
      - b. A refund of the auto-renewal transaction.



# Lifecycle – straw man option 3 “no problem to solve”

- Some registrars may think that there is no operational problem here given that a registrant can now request the deletion of the name at any time throughout the year and for non-renewal the registrar will have a 45-day timeframe in which they can choose to issue a delete command.
- It is therefore an open question as to whether or not we might be over-engineering a solution to address a perceived issue that may or may not exist?

# Lifecycle – current thinking on straw men

Option 1 is less problematic than option 2 in obtaining a consistent approach with the RFCs and the configurations available within them. We believe it could effectively mimic a registrars experience of today where the registrar wanted it.

Option 2 while it may look interesting would be inconsistent with the reach of the EPP 'client' statuses in their application to server-side processing. If we take the example of `clientDeleteProhibited` and `clientRenewProhibited` both being set then under solution 2 the prohibition on renewal will force a delete despite the setting of the client status and thus show clearly as a different reach. Alternatively, we could prevent that inconsistency through rejecting the ability to set both at the same time but that would remove a use case that is both normal and common amongst registrars across many registry backends.

Option 3 is an open question in our minds. Historically, there have been times we have looked to solve envisaged problems that over-complicate the operational results and that has led to criticism. It is an open question as to whether there is a real-world problem to solve.

We are interested to understand registrars thinking in this area, or alternative succinct approaches that would be compatible with standard lifecycle and address the concerns of some registrars.

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# Lifecycle – older auto-renew settings.

We propose in moving to an auto-renew lifecycle model to retire all of these fields as a matter of simplification for the following reasons:

- Next-bill is used by a very small number of tags and is largely used to trigger auto-renew behaviour the majority of the time up to a week before expiry.
- Auto-bill is used by more registrars but again is used to trigger auto-renew behaviour the majority of the time the day before expiry. (i.e. to mimic our proposed behaviour.)
- renew-not-required – the changes proposed to the lifecycle would see this replaced by the usage of either the new method to trigger auto delete at the end of the lifecycle or the delete command and redemption period.

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# Lifecycle – Delete, Restore and Restore Report.

- We believe allowing registrars to act as agents of registrants throughout the life of a domain will enable a better registrant experience.
- We propose registrars will be able to use the DELETE command on behalf of their registrants.
- In order to support this safely we believe that for domains deleted outside of the 'add grace period' must be followed by an RFC3915 redemption period to allow for mistakes to be rectified.
- Some registrars have raised concerns around RFC defined process in order to get a domain out of redemption period.

# Lifecycle – Delete, Restore and Restore Report.

- The EPP defined process to restore a domain from redemption period is to send two commands:
  - A restore command; followed by
  - within 5 days a Restore report command.
- The implementation of an RFC3915 restore mechanism in web domain manager that has minimal impact on a user's experience is relatively trivial to handle with a simple web-based user experience at Nominet's end. We do not envisage any issues for users that exclusively use Web Domain Manager.
- There is some evidence from our gTLD experience that registrars who utilise EPP sometimes prefer Web Domain Manager to deal with restore commands.
- To restore domains in EPP a registrar first requires issuing a RESTORE command, before then issuing a RESTORE REPORT command. We would like to understand from registrars the specific details of the challenges themselves, the motivations and concerns that lead them not to include RESTORE and RESTORE REPORT commands within their EPP client software so that we can review the details of this problem further.

# Lifecycle – Delete, Restore and Restore Report.

Potential alternative approach:

- If we were to consider deviation from the EPP standard, one potential solution to reduce the EPP complexity might be to allow that for domains which have passed their expiry date; and are also in Redemption Period to be restored by means of a RENEW command being treated as also RESTORING the domain as part of the RENEW. In this scenario the registry would be giving up the option to obtain the extra data available from the restore report.
- The challenge we see with the use of the RENEW command more generally for domains which have entered redemption period prior to their expiry date is that the domain still has some life left to it and it may drive behaviour that encourages registrars to only support restore for domains where the registrant commits for an additional annual increment. We are not sure that is in the best interests of registrants.
- If this is a real world problem is the correct place to solve this at Nominet for one registry, or is it for registrars and registries to engage in the IETF Registry Extensions process to update the RFCs and simplify the technical process?

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# Lifecycle - Notifications from Nominet to registrants

In .UK today Nominet notify registrants by email when their domain:

1. expires.
2. is suspended for non-renewal.
3. is purged from the registry.

While we do intend to retain the 3-way contract in order to be available to provide that emergency care for registrants under a compliance process, we are open to understand registrars views on the benefits of Nominet doing this direct communication versus requiring registrars to provide appropriate care in these areas for their registrants and ensuring that through an appropriate compliance regime.

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# Lifecycle - detail

## RFC3915 periods:

- Change add period from "before next invoice" to "5 days".
- Change renew period from "before next invoice" to "5 days".
- Introduce an auto-renew period of "45 days".
- Introduce a transfer period of "5 days".
- Change redemption period from "60 days" to "30 days".
- Introduce a pending restore period of "5 days".
- Retain pending delete period of "5 days".

## Transactions:

- Registrars will only be invoiced for transactions that have completed their associated grace period.
- The registry will charge £0 for restore
  - Some registrars have suggested that registrars should not be allowed to charge additional restore fees. We would like feedback on this.

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# Lifecycle – proposed obligations on registrars

- Bind registrants to Nominet's terms and conditions at the point of registration, renewal and transfer between registrars.
- Update domains at the registrants request throughout the lifecycle of the domain including and up to the start of the last 5 day pending delete period.
- To have had a renewal request from the registrant for a domain to be renewed. A renewal request can be made at any time for future renewals.
- If no renewal request is received a registrar must issue a 'delete' command during the auto-renew grace period unless extenuating circumstances exist. A registrar must provide in their policies or terms and conditions that are shared with the registrant information on when to expect the registrar to 'delete' a domain.
- If extenuating circumstances exists a registrar may renew the domain at their own cost but must keep a record of those circumstances which can be shared with the .UK compliance team.



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# Questions

.UK EPP Standardisation

<https://registrars.nominet.uk/proposals/proposal-for-uk-epp-standardisation/>





# Thank you

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