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# VMIC Use Cases and Requirements

## Models

### Early design draft

- HEPiX\_VWG\_-\_Image\_Distribution\_-\_Draft\_.pdf: Image Distribution (Draft)

### CERN alternate model

#### slides

VMIC.pdf: VMIC CERN alternative model - original slides

#### comments received

- the usage of VMIC for all instances was found to be confusing. It was proposed by OS to distinguish between a Site-VMIC (SVMIC) and an Endorser VMIC (EVMIC).
- implementation wise this difference may not be relevant

## VM life cycle

1. VMI creation
2. VMI endorsement + publication
3. VMI distribution (between sites)
4. VMI verification
5. VMI approval
6. VMI distribution (within each site)
7. VMI revocation

## Definitions

## Use Cases

1. Endorser handling:

-----

- 1.1 A new Endorser for VO XYZ enters.

- 1.1.1 All sites supporting VO XYZ must be informed

- 1.1.2 The new endorser needs to be approved

- 1.1.3 All sites supporting VO XYZ are asked to make his images available for the users of this VO

- 1.2 An Endorser leaves VO XYZ and is not replaced

- 1.2.1 The VO decides to revoke all his images

- 1.2.2 The VO wants the sites to keep running his images

- 1.2.3 All sites supporting VO XYZ must be informed about this change. No NEW images of this VO

- 1.3 An Endorser E1 of VO XYZ is replaced by Endorser E2

- 1.4 VO A elects a new Endorsers E1. Site S1 supports VO A. Site S2 does not support VO A

- 1.4.1 Site S1 needs to take action

- 1.4.2 Site S2 should not be bothered

- 1.5 An Endorser becomes unavailable for an extended period

- 1.5.1 Endorser is ill, or on holidays

- 1.5.2 The site hosting his VMIC becomes unavailable

## 2. Endorser actions:

-----

2.1 A new image is released. Endorser A blesses it for publication

2.1.1 Sites add the new image

2.1.2 Supporting Sites are asked to make the new image available for the users

2.2 Endorser A revokes a previously blessed images, eg because a bug has been found, with

2.3 Endorser A wants to update an existing image

## 3. Site actions:

-----

3.1 A site B wants to use a site specific image for local users

3.2 A site B has created an images which is useful for other sites and wants to share it

3.3 A site is asked to run an image from a trusted endorsers, and the site policies allow

3.3.1 the image integrity is ok, and the image can be made available

3.3.2 the image integrity is violated (eg. wrong checksum, wrong signature ...)

3.4 A site is asked to run an image from a trusted endorser, but site policies forbid the

3.5 A site needs to stop running images for type XYZ because of some reason (security, b

3.6 A site needs to stop running all images of Endorser XYZ, which were previously trust

3.7 A site needs to make a new image available to their users

3.8 Endorser A is replaced by Endorser B. Images of A are no longer trusted, Images of E

# Model testing

## Original design

## CERN proposed alternative model

### 1. Endorser handling

#### Notes:

- Each endorser runs his own VMIC.
- Endorsers can be associated to
  - + a site (side endorser)
  - + a VO (VO endorser)

#### 1.1: A new Endorser for VO XYZ enters

-----

\* The endorser sets up his VMIC

\* The endorser VMIC gets listed in the VOs list of endorsers

##### 1.1.1

\* The change gets announced to the sites supporting this VO

##### 1.1.2

\* The sites decide to update their local list of endorsers or not

\* The sites get the list of images of this new endorser from the endorsers VMIC

##### 1.1.3

\* The sites start the local approval procedure for the images of this endorser

#### 1.2: An Endorser leaves VO XYZ and is not replaced

-----

##### 1.2.1: The VO decides to revoke all his images

\* The endorser is removed from the VOs list of endorsers

\* The endorsers VMIC is destroyed

\* The sites supporting this VOs are informed of the change by the VO

\* The sites update their local list of endorsers

\* The sites ensure that local copies of all affected images are revoked

##### 1.2.2: The VO wants the sites to keep running his images

\* in this case the VO must provide a new endorser who re-endorses the images, case 1.3

##### 1.2.3: As the endorsers VMIC has been destroyed, no new images can be released by this per

#### 1.3: An Endorser E1 of VO XYZ is replaced by Endorser E2

-----

\* The VO follows step 1.1 to support the new endorser, and then 1.2 to revoke the old on

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1.4: VO A elects a new Endorsers E1. Site S1 supports VO A. Site S2 does not support VO A  
-----  
1.4.1, 1.4.2  
\* implicitly fulfilled as the VO only contacts those sites which support it

2. Endorser actions  
=====

2.1 A new image is released. Endorser A blesses it for publication  
-----  
\* The endorser adds the image to his VMIC

a/ sites regularly poll the VMICs of all endorsers in their local endorser list for updates  
b/ VOs can ask sites to perform this check outside the normal intervals  
\* sites start the local approval procedure to make the image available

2.1.1, 2.1.2. fulfilled by construction

2.2 Endorser A revokes a previously blessed images, eg because a bug has been found, without notice  
-----  
\* The endorser removes these images from his VMIC  
\* sites regularly poll the VMICs in their local endorser list  
\* VOs can ask sites to poll outside the regular interval  
\* sites remove all images which are no longer in the VMICs from their local list of approved images

2.3 Endorser A wants to update an existing image  
-----  
\* The endorser adds the new image to his VMIC  
\* The endorser removes the old image from his VMIC  
\* sites regularly poll the VMICs in their local endorser list, and revoke support for all old images  
\* VOs can ask sites to poll outside the regular interval  
\* sites decide on the approval of the updated image, and add the image to their list of approved images  
\* sites remove all images which are no longer in the VMICs from their local list of approved images

3. Site actions  
=====

3.1 A site B wants to use a site specific image for local users  
-----  
\* the site's local endorser endorsed the image  
\* the site approves it's own image  
\* the image is added to the sites list of approved images

3.2 Site B has created an image which is useful for other sites and wants to share it  
-----  
\* the site's endorser adds the image to his VMIC  
\* remote sites supporting this endorser will pick up the image during regular update checks  
\* the remote sites launch their local approval procedure  
\* the remote sites add the new image to their local list of approved images (or not)

3.3 A site is asked to run an image from a trusted endorser, and the site policies allow it  
-----  
\* implicitly handled

3.4 A site is asked to run an image from a trusted endorser, but site policies forbid them  
-----  
\* implicitly handled. The site does not approve the image and does not add it to it's local list of approved images

3.5 A site needs to stop running images for type XYZ because of some reason (security, bug)  
-----  
\* the site gets notified by an external instance of the problem  
\* the site checks the meta data information of the images in their local list of approved images  
\* the site flags image for removal based on their meta data  
\* the site removes the affected images from their local list of approved images  
\* in case of a VO, the affected VO is informed  
\* the VO proceeds as described above for the revocation of the image

3.6 A site needs to stop running all images of Endorser XYZ, which were previously trusted  
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- \* The endorser will have disappeared from the list of trusted endorsers
- \* images of this endorser get removed from the local list of approved images

3.7 A site needs to make a new image available to their users

- \* The image has been added upstream and appears in one of the VMICs
- \* At the next poll, or on request of the VO, the approval procedure is started
- \* the image is added or not to the local list of approved images

3.8 Endorser A is replaced by Endorser B. Images of A are no longer trusted, Images of End

- \* see 1.3

## Related information

### Policy document (draft)

[http://www.jspg.org/wiki/Policy\\_Trusted\\_Virtual\\_Machines](http://www.jspg.org/wiki/Policy_Trusted_Virtual_Machines)

-- UlrichSchwickerath - 18-Jun-2010

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