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| # | Description | Obligations in Paper | Obligations in YML file |
| 1 | Create Proposal | Create\_proposal Obligation  When any user with permission to perform the operation “assign to” on PDS(OA) performs that operation, an Object node is created with the name of current user and with assignment to Object Attribute called PI-Info. | - label: create\_proposal  event:  subject:  anyUser:  operations:  - assign to  target:  policyElements:  - name: PDS  type: OA  response:  actions:  - assign:  what:  - function:  name: current\_user  where:  - name: PI  type: UA  - create:  what:  - function:  name: create\_node  args:  - function:  name: get\_node\_name  args:  - function:  name: current\_user  - O  where:  - name: PI-Info  type: OA |
| 2 | Add Co-PI | Add\_copi obligation  EVENT: When any user with permission to perform the operation “assign to” on CoPI(UA) performs that operation,  RESPONSE: an Object node is created with the name of current user and with assignment to Object Attribute called CoPI-Info. | - label: add\_copi  event:  subject:  anyUser:  operations:  - assign to  target:  policyElements:  - name: CoPI  type: UA  response:  actions:  - create:  what:  - function:  name: create\_node  args:  - function:  name: get\_node\_name  args:  - function:  name: child\_of\_assign  - O  where:  - name: CoPI-Info  type: OA  - assign:  what:  - function:  name: child\_of\_assign  args:  - function:  name: get\_node\_name  args:  - function:  name: child\_of\_assign  - U  where:  - name: CoPI-Info  type: OA |
| 3 | Add SP | Add\_SP obligation  When any user with permission to perform the operation “assign to” on SP(UA) performs that operation, an Object node is created with the name of current user and with assignment to Object Attribute called SP-Info. | - label: add\_sp  event:  subject:  anyUser:  operations:  - assign to  target:  policyElements:  - name: SP  type: UA  response:  actions:  - create:  what:  - function:  name: create\_node  args:  - function:  name: get\_node\_name  args:  - function:  name: child\_of\_assign  - O  where:  - name: SP-Info  type: OA |
| 4 | Delete SP | delete\_SP obligation  When any user with permission to perform the operation “deassign from” on SP(UA) performs that operation, the permission to write(w) is revoked for UA called PI (shouldn’t be SP????) on OA called PI-Editable-Data  THE EVENT AND RESPONSE DO THE SAME THING(OBLIGATION TO THE RIGHT IS VERY WRONG)  NEED TO DELETE THE CREATED OBJECT INSTEAD | - label: delete\_sp  event:  subject:  anyUser:  operations:  - deassign from  target:  policyElements:  - name: SP  type: UA  response:  actions:  - delete:  grant:  subjects:  - name: SP  type: UA  operations:  - r  targets:  - name: SP-Editable-Data  type: OA  - label: delete\_sp  event:  subject:  anyUser:  operations:  - deassign from  target:  policyElements:  - name: SP  type: UA  response:  actions:  - delete:  create:  what:  - function:  name: delete\_node  args:  - function:  name: get\_node\_name  args:  - function:  name: child\_of\_assign  - O |
| 5 | Submit Proposal  Done using prohibition(delete is not working) | Obligation-proposal-submit: Event Pattern : PI create-o in Submit  i. add prohibition : deny( PI , write, PI-Editable-Data )  ii. add prohibition : deny( CoPI , write, CoPI-Editable -Data)  iv. add prohibition : deny( PI , assign-u-to, deassign-u-to, CoPI)  v. add prohibition : deny( CoPI , assign-u-from, SP-Eligible faculty)  vi. add prohibition : deny( CoPI , assign-u-to, deassign-u-to, SP)  vii. add prohibition : deny( PI, delete/Save/Submit, PDS )  viii. add prohibition : deny( CoPI, Save, PDS)  ix. create association <Chair, {assign-o}, Chairs-Approval>  x. create association <Chair, {read}, Composite-PDS>  xi. add departmental chairs as user in Chair, Business manager, Dean,  IRB, Research-Admin, Research-Director of related PI/CoPIs .  xii. load the Create approval policy class and add the existing users from  Chair of Editing Policy class to the Current-Users of Create approval  policy class. | - label: submit\_proposal  event:  subject:  operations:  - assign to  target:  policyElements:  - name: Submission-Info  type: OA  response:  actions:  - deny:  label: deny1  subject:  function:  name: current\_user\_to\_deny\_subject  operations:  - w  target:  complement: false  containers:  - name: PI-Editable-Data  type: OA  - deny:  label: deny2  subject:  function:  name: get\_user\_to\_deny\_subject  args:  - CoPI  - UA  operations:  - w  target:  complement: false  containers:  - name: CoPI-Editable-Data  type: OA  - deny:  label: deny3  subject:  function:  name: current\_user\_to\_deny\_subject  operations:  - assign-u-from  target:  complement: false  containers:  - name: CoPI  type: UA  - deny:  label: deny4  subject:  function:  name: get\_user\_to\_deny\_subject  args:  - CoPI  - UA  operations:  - assign-u-to  target:  complement: false  containers:  - name: SP  type: UA  - deny:  label: deny5  subject:  function:  name: get\_user\_to\_deny\_subject  args:  - CoPI  - UA  operations:  - deassign-u-to  target:  complement: false  containers:  - name: SP  type: UA  - deny:  label: deny6  subject:  function:  name: get\_user\_to\_deny\_subject  args:  - PI  - UA  operations:  - Save  target:  complement: false  containers:  - name: PDSs  type: OA  - deny:  label: deny7  subject:  function:  name: get\_user\_to\_deny\_subject  args:  - PI  - UA  operations:  - Delete  target:  complement: false  containers:  - name: PDSs  type: OA  - deny:  label: deny8  subject:  function:  name: get\_user\_to\_deny\_subject  args:  - PI  - UA  operations:  - Submit  target:  complement: false  containers:  - name: PDSs  type: OA |
| 6 | Delete Co-PI | Obligation-CoPI-user-delete: Event Pattern : User is deleted from CoPI  THE EVENT AND RESPONSE DO THE SAME THING  NEED TO DELETE THE CREATED OBJECT INSTEAD | - label: delete\_copi  event:  subject:  anyUser:  operations:  - deassign from  target:  policyElements:  - name: CoPI  type: UA  response:  actions:  - delete:  create:  what:  - function:  name: delete\_node  args:  - function:  name: get\_node\_name  args:  - function:  name: child\_of\_assign  - O |
| 8 | Assign Comment Sign Chair/IRB/RA/RD/RA/RD | Obligation-assign\_comment\_sign: Event Pattern : A Comment-Sign object is created and  assigned to Approval-Content.  Response : i) assign the assigned object to the Comment-Sign of the chair approval.  Obligation-approve: Event Pattern : An approval object is created and assigned to Current  Approval.  Response : Call to an Admin Command which performs the follow routine with  currentPhase = “Chair” and nextPhase = “Business Manager”  Approval\_routine(currentPhase, nextPhase) {    i) assign the assigned object to the Approval of the currentPhase-  Approval.  ii) deassign the object from the Current-Approval  iii) Deassign the actor user from Current-Users.  49    iv) Count if currentPhase UA is empty; if true then :  a) Delete association ( chair, assign-o, currentPhase -Approval)  b) create association :  < nextPhase, { assign-o}, nextPhase-Approval >  c) deassign Comment-sign, approval and disapproval from  currentPhase -Approval and assign to nextPhase-Approval.  d) Assign all the users from nextPhase to Current Users.  } // end of routine | ProposalDatasheet |
| 9 | Disapproval | Obligation-assign\_disapproval: Event Pattern : A object object is created and assigned to Current  Disapproval.  73    Response : i) All the users will be removed from Current Users.  ii) All the prohibitions that took place after PI submission will be  removed. PI/CoPI will retain proposal editing power again as before. | ProposalDatasheet |
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