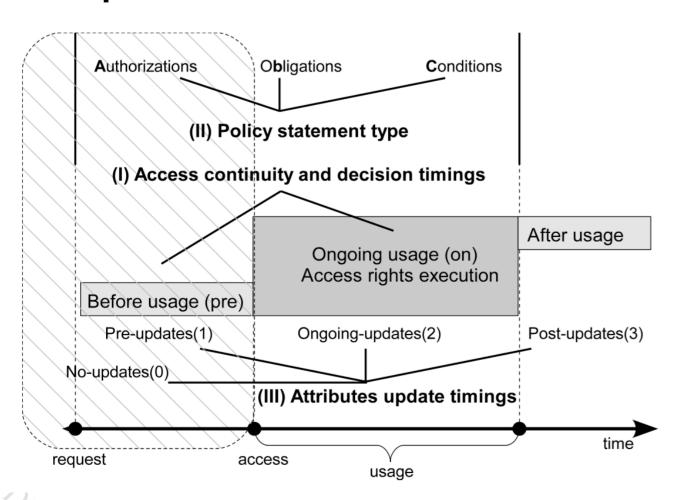




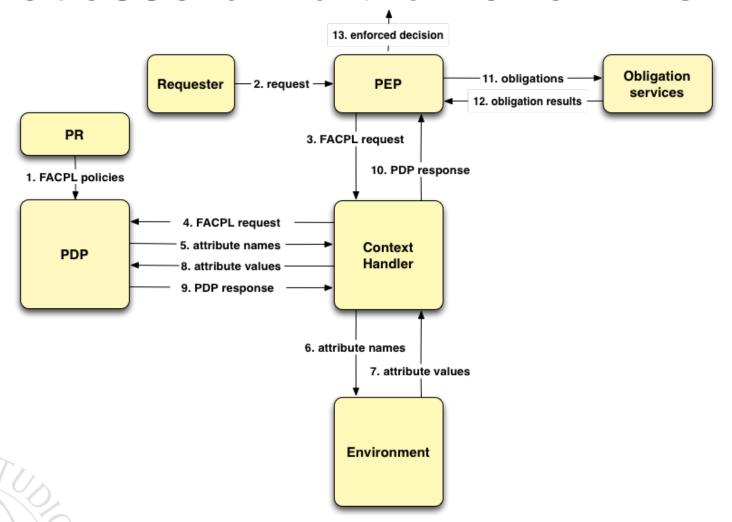
Progetto e implementazione in FACPL di un monitor a runtime per il supporto al controllo continuativo degli accessi

Relatore: Rosario Pugliese Correlatore: Andrea Margheri

Fasi del processo di decisione UCON









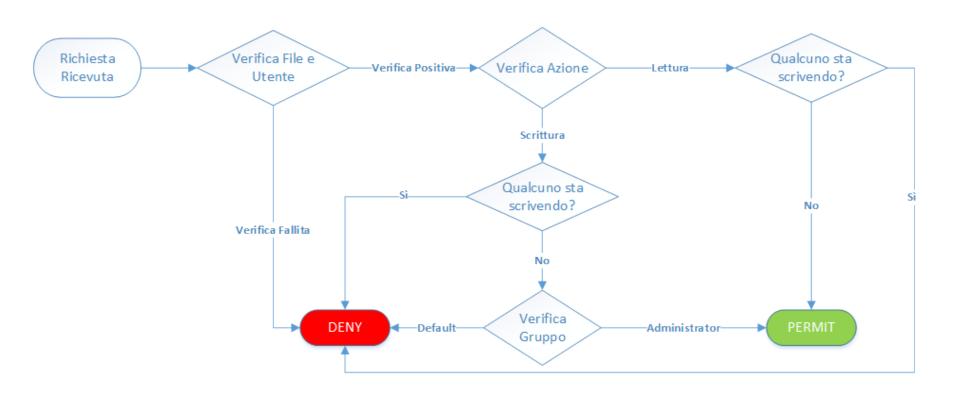
Esempio di Usage Control

Accesso in lettura e scrittura di file





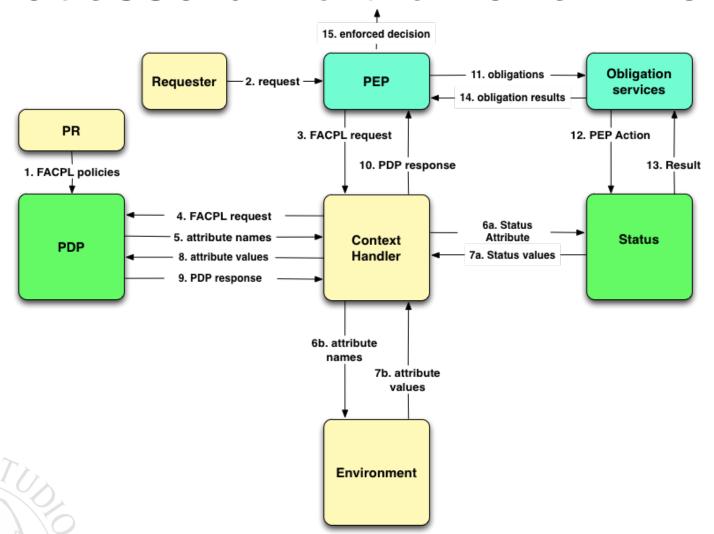
Diagramma di flusso



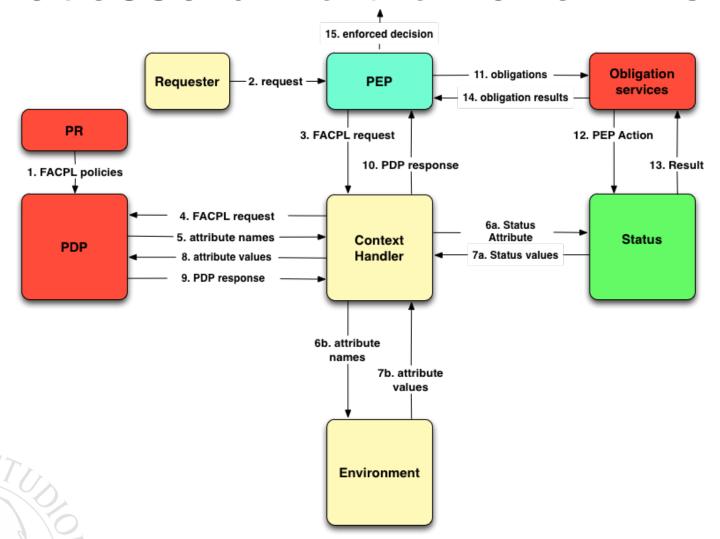


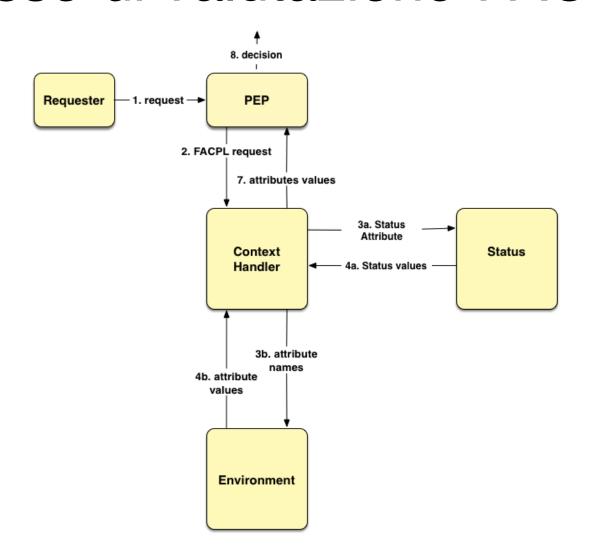
Controlli continuativi in FACPL

- Monitor per la scelta del processo valutativo
- Obligation utilizzate per il controllo da parte del monitor
- Adattamento della sintassi delle risposte



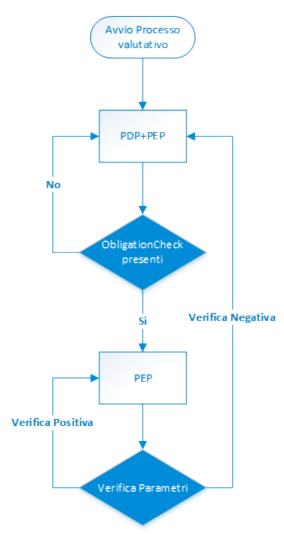












Esempio politica scrittura

```
PolicySet Write_Policy { deny-unless-permit
 target: equal ("write", action/id)
 policies:
  Rule write ( permit target:
    equal ( group / id, "Administrator") &&
    equal (file / id, "thesis.tex") &&
    equal ( status / isWriting , false )
 obl:
[ permit M flagStatus(isWriting, true) ]
```

Esempio politica lettura

```
PolicySet Read_Policy { deny-unless-permit
target: in ( file/id , set ("thesis.tex" , "facpl.pdf"))
policies:
    Rule read ( permit target:
        equal ("read", action/id) &&
        equal ( status / isWriting , false )
    )
    obl:
[ permit equal ("read", action/id) , in ( file/id , set ("thesis.tex" , "facpl.pdf")) ]
```

Esempi di obbligazioni

Scandeza Temporale

```
[ permit equal ("read",action/id) , in ( file/id , set
  ("thesis.tex" , "facpl.pdf")) , 12:00:00 ]
```

Scadenza sul numero di richieste

```
[ permit equal ("read",action/id) , in ( file/id , set
    ("thesis.tex" , "facpl.pdf")) , 10]
```



Esempio richieste

```
Request: { Request4
  (name / id , "Alice")
  (group / id , "Administrator")
  (action / id, "write")
  (file / id, "thesis.tex")
}
```

```
Request: { Request1
  (name / id , "Bob")
  (action / id, "read")
  (file / id, "thesis.tex")
```





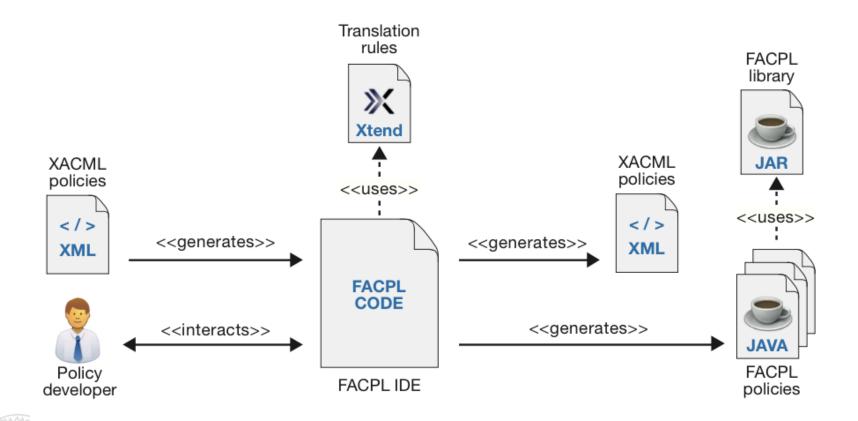
Risposte delle richieste

	Azione	Risultato	PV	Tempo
Richiesta 1	Lettura	PERMIT	PDP+PEP	53ms
Richiesta 2	Lettura	PERMIT	PEP	6ms
Richiesta 3	Lettura	PERMIT	PEP	9ms
Richiesta 4	Scrittura	PERMIT	PDP+PEP	47ms
Richiesta 5	Lettura	DENY	PDP+PEP	25ms
Richiesta 6	Stop Scrittura	PERMIT	PDP+PEP	44ms
Richiesta 7	Lettura	PERMIT	PDP+PEP	32ms
Richiesta 8	Lettura	PERMIT	PEP	3ms



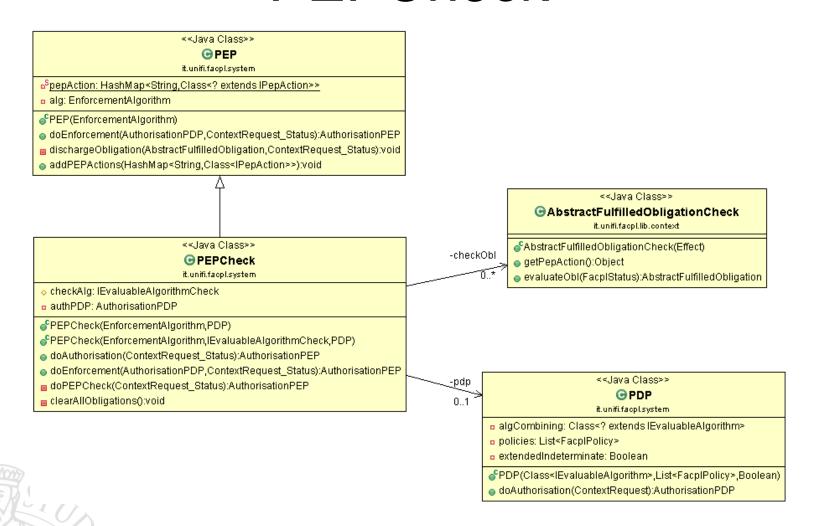


ToolChain di FACPL





PEPCheck





Plugin Eclipse

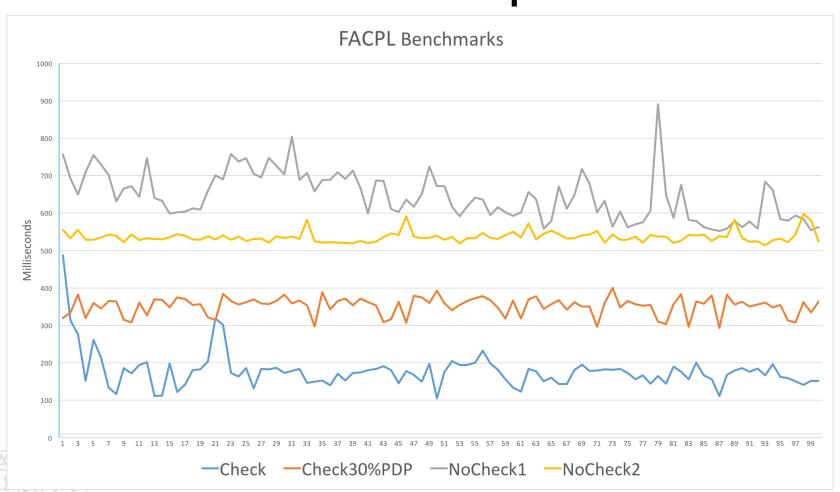
```
Java - prov/src-facpl/example/facpl_file.fpl - Eclipse Platform
          Resource Java
                                                                                                                                               - -
    F facpl_file.fpl 

□ PolicySet_PatientSummary.java
8
                                                                                                                                                       8
      ⊖ PolicySet PatientSummary { permit-overrides
                                                                                                                         Undo Typing
                                                                                                                                             %Z
                                                                                                                         Revert File
               equal ( "TREATEMENT" , subject/purposeofuse ) &&
                                                                                                                                                       8
               equal ( "medical doctor" , subject/role ) &&
                                                                                                                         Save
                                                                                                                                             #S
               equal ( "34133-9" , resource / resource-id )
           policies:
                                                                                                                         Open Declaration
                                                                                                                                              F3
               Rule rule1 ( permit target:
                                                                                                                         Open Generated File
                       equal ("Read" , action/action-id )
                                                                                                                         Quick Outline
                   && in( "PRD-003", subject / hl7.permission)
                                                                                                                                             #0
                   && in( "PRD-005", subject / hl7.permission)
                                                                                                                         Open With
                   && equal (3, status/intero)
                                                                                                                         Show In
                                                                                                                                     W#7
           obl:
                                                                                                                         Cut
                                                                                                                                             ЖX
               [permit equal ("Read",action/action-id), in ( subject / hl7.permission, set("PRD-003", "PRD-005")), 10:10
                                                                                                                         Copy
                                                                                                                                             ₩C
               [permit equal ("Read", action/action-id), in ( subject / hl7.permission , set("PRD-003" , "PRD-005")) , 10]
               [permit equal ("Read", action/action-id), in ( subject / hl7.permission , set("PRD-003" , "PRD-005"))]
                                                                                                                         Copy Qualified Name
                                                                                                                         Paste
                                                                                                                                             #V

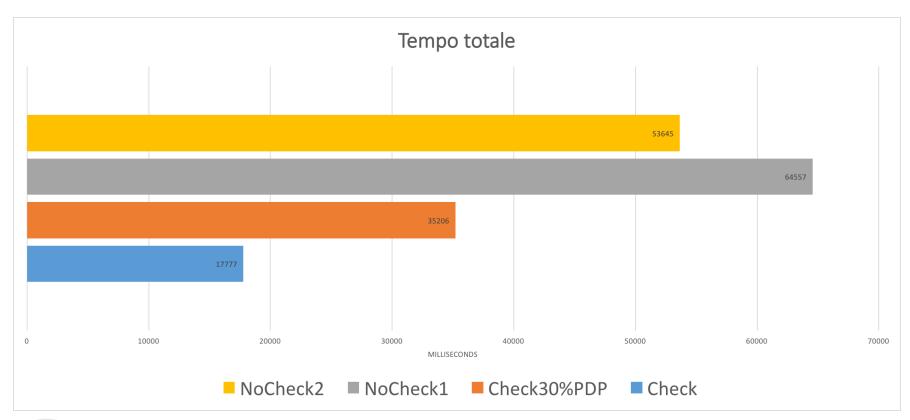
⊕ PAS {
                                                                                                                         Rename Element
         Extended Indeterminate : false :
                                                                                                                         Validate
         Java Package : "example" ;
                                                                                                                         Quick Fix
         Requests To Evaluate : Request1, Request2;
                                                                                                                                             £1
                                                                                                                         Source
           (int intero = 0)(float reale = 2.3)(boolean booleano = false)
           (date data = 23:14:00)
                                                                                                                         Find References
                                                                                                                                           介無G
         pep: deny-biased
                                                                                                                         Add to Snippets...
         pdp: deny-unless-permit
         include PatientSummary
                                                                                                                         Run As
                                                                                                                         Debug As
      Validate
           (subject/purposeofuse , "TREATEMENT")
                                                                                 Generate Java Code From FACPL
                                                                                                                         Facpl
           (subject/role , "medical doctor")
                                                                                 Create Security Property...
                                                                                                                         Team
           (resource/resource-id , "34133-9")
           (action/action-id, "Read")
                                                                                                                         Compare With
                                                                                 Create Structural Property...
           (subject/hl7.permission, "PRD-003", "PRD-005", "PRD-010", "PRD-016")
                                                                                                                         Replace With
                                                                                 Generate SMT-LIB code From FACPL
                                                                                 Generate XACML Code From FACPL
      Preferences...
                                                                             Writable
                                                                                                        22:29
                                                                                           Insert
```



Valutazione delle prestazioni



Valutazione delle prestazioni







Sviluppi futuri

Utilizzo della posizione GPS dell'utente

Valutazioni in base alla congestione della rete





Grazie dell'attenzione

