PROJECT CASE: BPM HR PROCEDURE APPROVAL

- 1. Tujuan Aplikasi HRProcedure Approval
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 - 3.1. Rename Project template
 - 3.2. Configure web.config
 - 3.3. Buat connection string di tenk2d91
- 3. HRProcedure Approval Flow Development
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 - 3.2. Client Activity, Server Activity
 - 3.2.1. Client Activity HRProcedure Approval SmartObject Get Application Address

ClientEvent - Prepare Request

Client Activity Hierarchy Approval Activity

3.2.2. Server Activity HRProcedure Approval

SmartObject - Get Service Address
Default Server Event – Get Next Participant
Server Activity Approved

- 3.3. Deploy Flow
- 4. HRProcedure Approval Service
- 5. Integrating to BPM HOME
- 6. Running Aplikasi HRProcedure Approval

HRProcedure Approval

1. Tujuan Aplikasi HRProcedure Approval

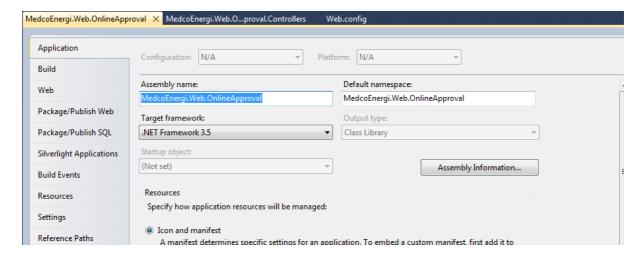
BPM3 HRProcedure Approval adalah suatu aplikasi sederhana yang bisa digunakan secara general untuk permintaan *approval by system* di lingkungan HR Payroll.

Tujuannya adalah agar semua permintaan approval terdokumentasi dengan baik di sistem, mengingat seringnya permintaan *approval* tersebut.

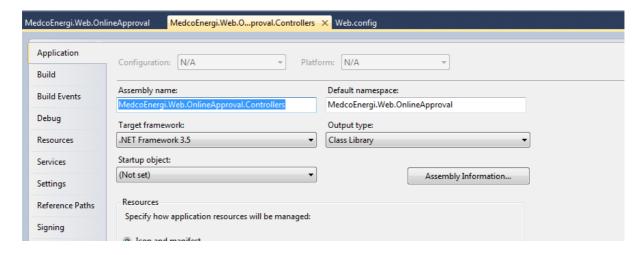
2. Web Form Development

1.1. Rename Project Template

Rename {ProjectName} dan ProjectName dengan nama aplikasi di entire project.



Gambar 3.1.1. Properties MedcoEnergi. Web. Online Approval.



Gambar 3.1.2. Properties MedcoEnergi. Web. Online Approval. Controllers.

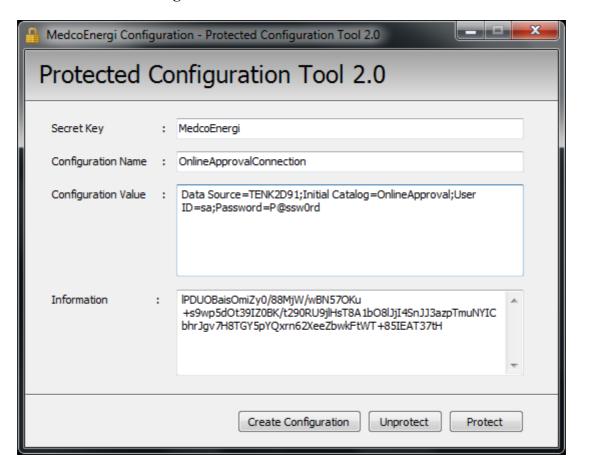
1.2. Configure Web.config

Yang saya lakukan adalah membandingkan web.config dengan web.config aplikasi yang sudah jadi.

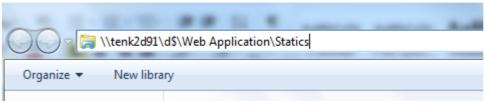


Gambar 3.2.1. WebConfig. Tanda highlight, value diisi dengan flow yang telah dideploy.

1.3. Buat Connection String di tenk2d91



Gambar 3.3.1. Protected Configuration Tool.



Gambar 3.3.2.Statics tenk2d91.

Tambahkan di web.config

```
web.config - Notepad

File Edit Fgrmat View Help

<add name="Informationservicesconnection" value="pzjQd+6LMONCOyNbupUGIUmZ6Kbubt/IzphkVdokNYZOp8PwsQY+hOMjXLvimeehQV9Oor/ZB

<add name="Evpmconnection" value="YTUMZ5VKHULeve37XXOKIOaG2DjImkDRH5eNpfDH09RZK6DIVapQJ4FDF+5LZfeil20tSorUtIj+SrjXxCfbY2DT

<add name="ClosingPeriodConnection" value="MO9NLRPUNPXNery)InxpBP21EBG9XjSL5CSDR6IHMQipUya70EIZk1T9C3/fp5exhIaMUfrFDU4+LAr

setti name= OnlineApprovatConnection" value="H04D2H1SDH1ZYJ6ESJH7MB5XGH3DJFASTDBFXTDF+TF+EXPFOXCH5DJFASTDBFXTDF+TF+EXPFOXCH5DGFTCOSTGFTCOSTGFTCOSTGFTCOSTGFTCOSTGFTCOSTGFTCOSTGFTCOSTGFTCOSTGFTCOSTGFTCOSTGFTCOSTGFTCOSTGFTCOSTGFTCOSTGFTCOSTGFTCOSTGFTCOSTGFTCOSTGFTCOSTGFTCOSTGFTCOSTGFTCOSTGFTCOSTGFTCOSTGFTCOSTGFTCOSTGFTCOSTGFTCOSTGFTCOSTGFTCOSTGFTCOSTGFTCOSTGFTCOSTGFTCOSTGFTCOSTGFTCOSTGFTCOSTGFTCOSTGFTCOSTGFTCOSTGFTCOSTGFTCOSTGFTCOSTGFTCOSTGFTCOSTGFTCOSTGFTCOSTGFTCOSTGFTCOSTGFTCOSTGFTCOSTGFTCOSTGFTCOSTGFTCOSTGFTCOSTGFTCOSTGFTCOSTGFTCOSTGFTCOSTGFTCOSTGFTCOSTGFTCOSTGFTCOSTGFTCOSTGFTCOSTGFTCOSTGFTCOSTGFTCOSTGFTCOSTGFTCOSTGFTCOSTGFTCOSTGFTCOSTGFTCOSTGFTCOSTGFTCOSTGFTCOSTGFTCOSTGFTCOSTGFTCOSTGFTCOSTGFTCOSTGFTCOSTGFTCOSTGFTCOSTGFTCOSTGFTCOSTGFTCOSTGFTCOSTGFTCOSTGFTCOSTGFTCOSTGFTCOSTGFTCOSTGFTCOSTGFTCOSTGFTCOSTGFTCOSTGFTCOSTGFTCOSTGFTCOSTGFTCOSTGFTCOSTGFTCOSTGFTCOSTGFTCOSTGFTCOSTGFTCOSTGFTCOSTGFTCOSTGFTCOSTGFTCOSTGFTCOSTGFTCOSTGFTCOSTGFTCOSTGFTCOSTGFTCOSTGFTCOSTGFTCOSTGFTCOSTGFTCOSTGFTCOSTGFTCOSTGFTCOSTGFTCOSTGFTCOSTGFTCOSTGFTCOSTGFTCOSTGFTCOSTGFTCOSTGFTCOSTGFTCOSTGFTCOSTGFTCOSTGFTCOSTGFTCOSTGFTCOSTGFTCOSTGFTCOSTGFTCOSTGFTCOSTGFTCOSTGFTCOSTGFTCOSTGFTCOSTGFTCOSTGFTCOSTGFTCOSTGFTCOSTGFTCOSTGFTCOSTGFTCOSTGFTCOSTGFTCOSTGFTCOSTGFTCOSTGFTCOSTGFTCOSTGFTCOSTGFTCOSTGFTCOSTGFTCOSTGFTCOSTGFTCOSTGFTCOSTGFTCOSTGFTCOSTGFTCOSTGFTCOSTGFTCOSTGFTCOSTGFTCOSTGFTCOSTGFTCOSTGFTCOSTGFTCOSTGFTCOSTGFTCOSTGFTCOSTGFTCOSTGFTCOSTGFTCOSTGFTCOSTGFTCOSTGFTCOSTGFTCOSTGFTCOSTGFTCOSTGFTCOSTGFTCOSTGFTCOSTGFTCOSTGFTCOSTGFTCOSTGFTCOSTGFTCOSTGFTCOSTGFTCOSTGFTCOSTGFTCOSTGFTCOSTGFTCOSTGFTCOSTGFTCOSTGFTCOSTGFTCOSTGFTCOSTGFTCOSTGFTCOSTGFTCOSTGFTCOSTG
```

Gambar 3.3.3. web.config di Statics tenk2d91.

3. HRProcedure Approval Flow Development

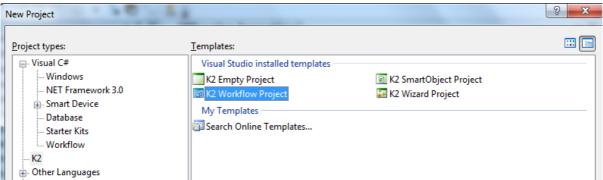
4.1. Membuat Project Baru

Pertama isi Database SmartBox seperti pada gambar 4.1.1. Database ini menyimpan URL aplikasi dan URL service yang digunakan pada flow nantinya.

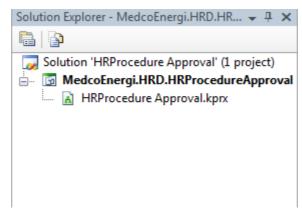


Gambar 4.1.1. Database SmartBox – Tabel ProcessConfig.

Isi nama project baru dengan MedcoEnergi.HRD.HRProcedureApproval. HRD adalah nama departement yang akan menggunakan aplikasi dan HRProcedureApproval adalah nama aplikasi. Dan Tambahkan process pada project MedcoEnergi.HRD.HRProcedureApproval dengan nama HRProcedure Approval (nama aplikasi).



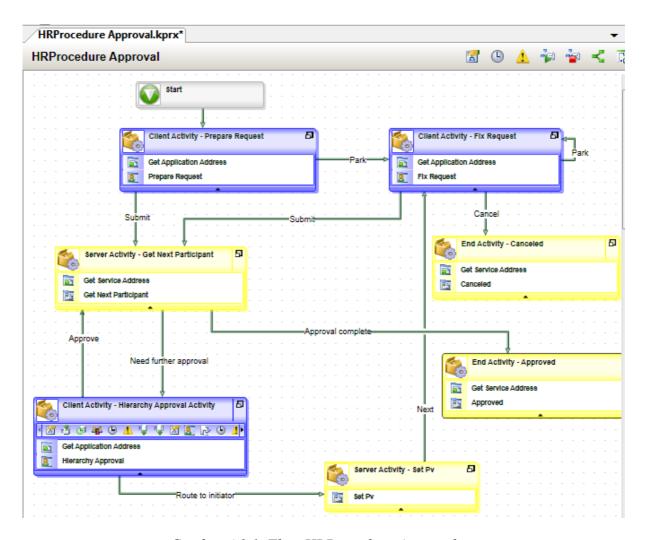
Gambar 4.1.2. New - Project - K2 Workflow Project.



Gambar 4.1.3. Solution Explorer K2 workflow HRProcedure Approval.

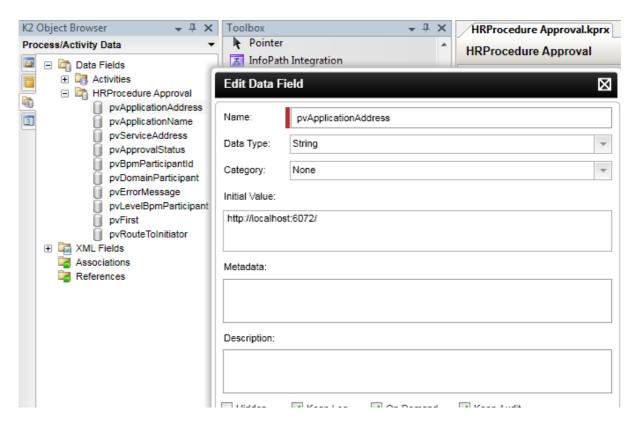
4.2. Client Activity, Server Activity

Client activity adalah aktivitas yang dilakukan user pada browser seperti Get Application Address (SmartObject Event, URL aplikasi), Prepare Request (Client Event), sedangkan server activity adalah aktivitas server/yang harus dilakukan server setelah client activity.



Gambar 4.2.1. Flow HRProcedure Approval.

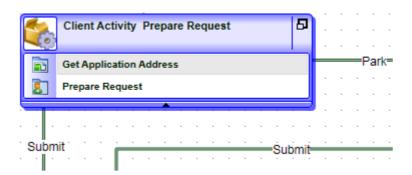
View – K2 Object Browser. Variabel - variabel global pada K2. Variabel ini nantinya banyak dibutuhkan ketika menulis code pada server activity.



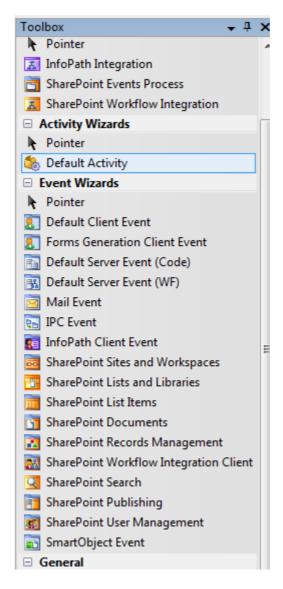
Gambar 4.2.2. K2 Object Browser.

4.2.1. Client Activity HRProcedure Approval

Get Application Address menyimpan alamat aplikasi pada variabel pvApplicationAddress. Sedangkan Prepare Request adalah aktifitas user melakukan pengisian form.



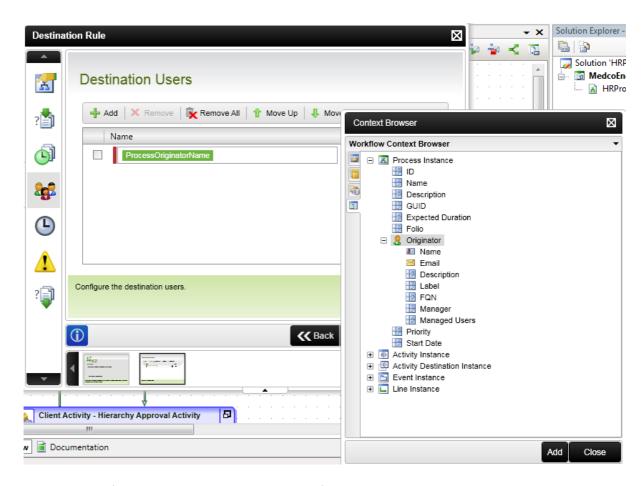
Gambar 4.2.1.1. Client Activity Prepare Request.



Gambar 4.2.1.2. K2 Toolbox.

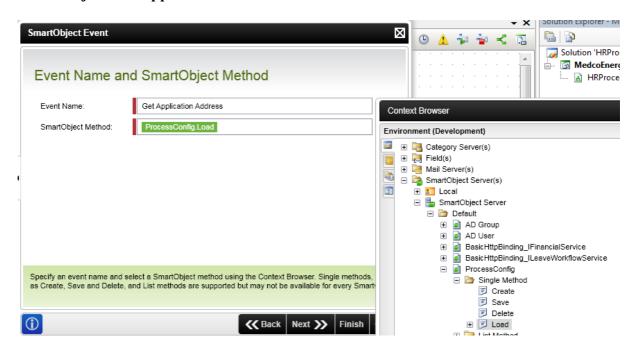
Default Activity pada toolbox untuk membuat Client Activity. SmartObject Event -> Get Application Address dan Default Client Event -> Prepare Request.

Client Activity Prepare Request dilakukan oleh initiator.



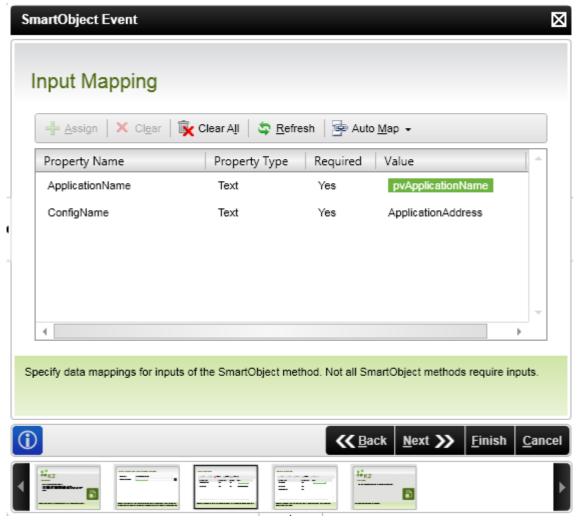
Gambar 4.2.1.3. Destination Users Client Activity Prepare Request.

SmartObject Get Application Address.



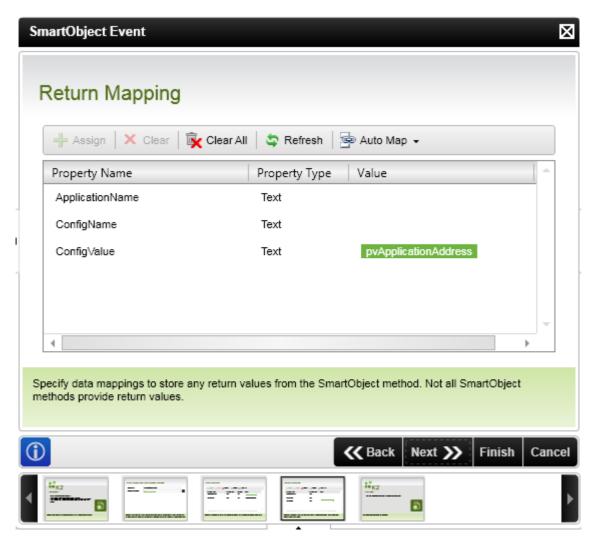
Gambar 4.2.1.4. Event Name dan SmartObject Method -> Get Application Address.

Klik Next. Gambar 4.2.1.4.



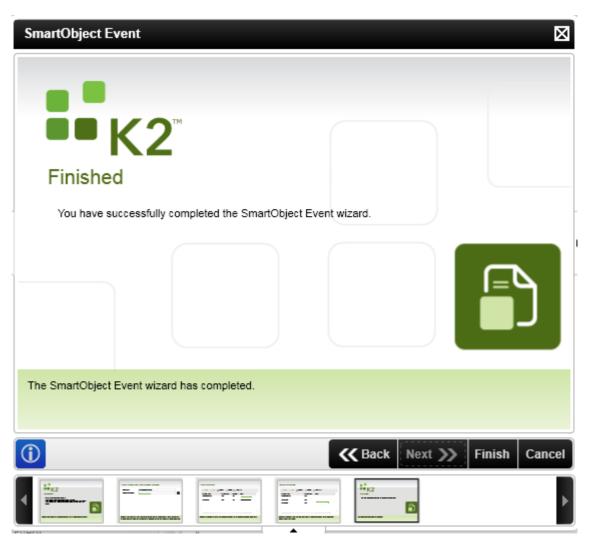
Gambar 4.2.1.5. Input Mapping -> Get Application Address.

Klik Next. Gambar 4.2.1.5.



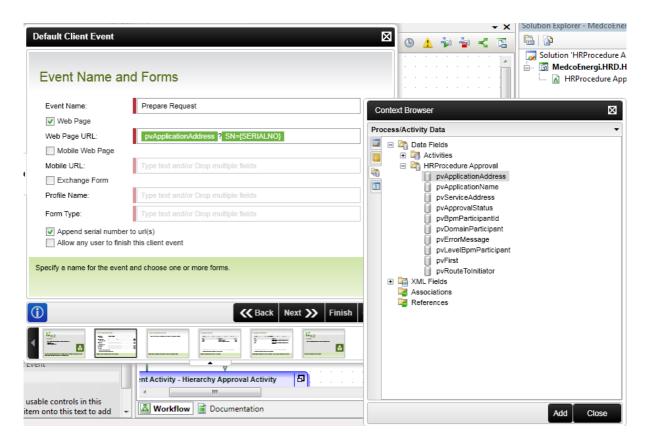
Gambar 4.2.1.6. Return Mapping -> Get Application Address.

Klik Next. Dan klik Finish pada gambar 4.2.1.7.



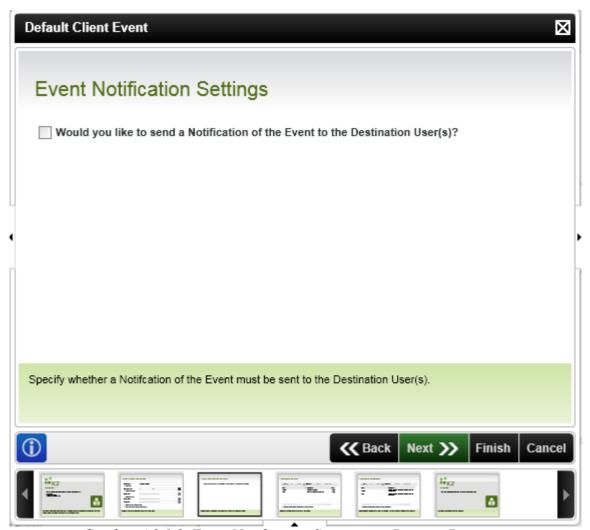
Gambar 4.2.1.7. Finished -> Get Application Address.

ClientEvent Prepare Request.



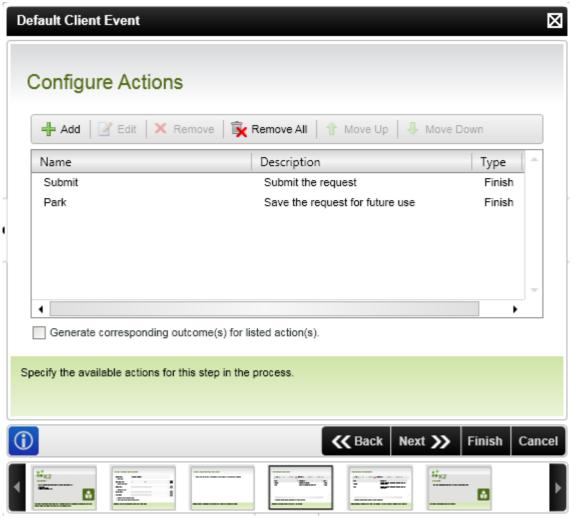
Gambar 4.2.1.8. Event Name dan Forms -> Prepare Request.

Klik Next. Gambar 4.2.1.8.



Gambar 4.2.1.9. Event Notification Settings -> Prepare Request.

Klik Next. Gambar 4.2.1.9.



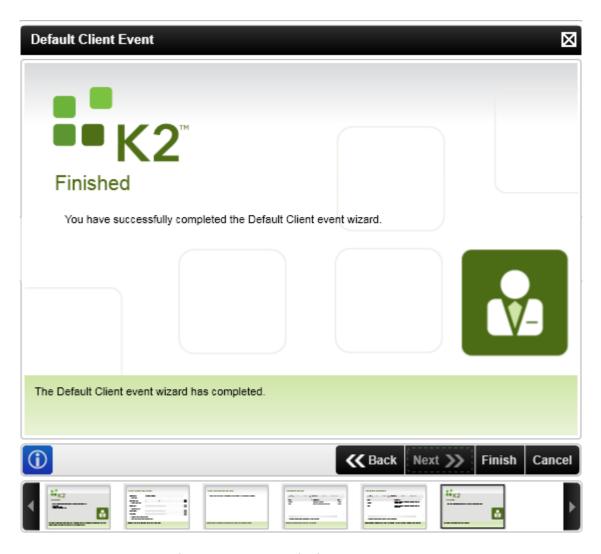
Gambar 4.2.1.10. Configure Actions -> Prepare Request.

Gambar 4.2.1.10. Centang Generate corresponding outcome(s) for listed action(s). Klik Next.



Gambar 4.2.1.11. Configure Outcomes -> Prepare Request.

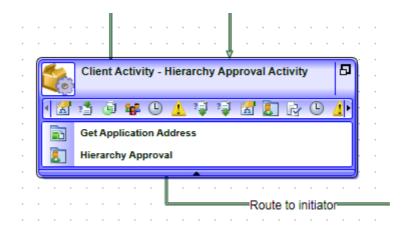
Gambar 4.2.1.11. Centang Generate corresponding line(s) for listed outcome(s). Klik Next.



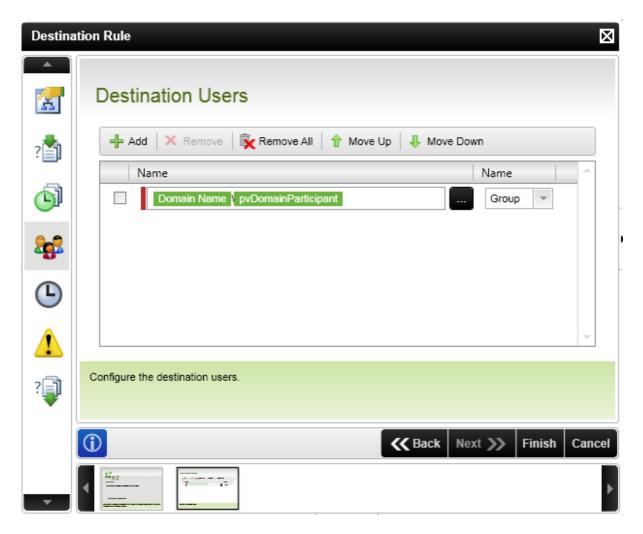
Gambar 4.2.1.12. Finished -> Prepare Request.

Klik finish.

Client Activity Hierarchy Approval Activity



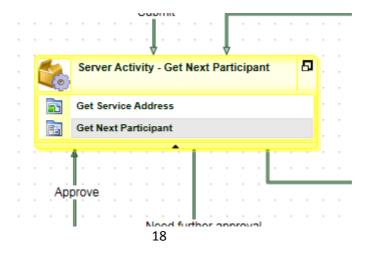
Gambar 4.2.1.13. Client Activity – Hierarchy Approval Activity.



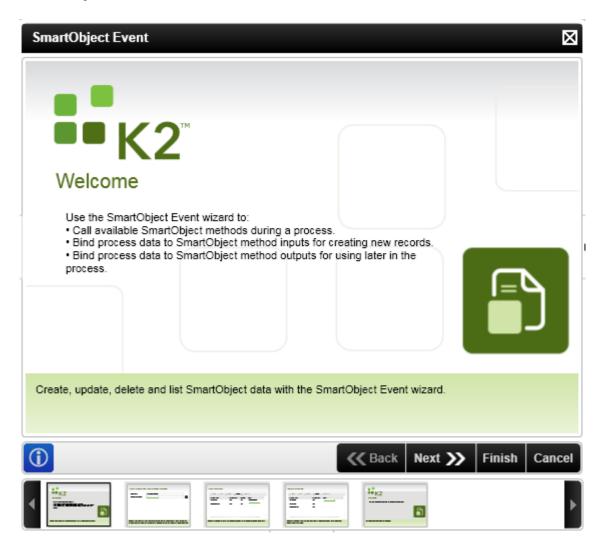
Gambar 4.2.1.14. Destination Users -> Client Activity - Hierarchy Approval Activity.

4.2.2. Server Activity HRProcedure Approval

Default Activity pada toolbox untuk membuat Server Activity. SmartObject Event -> Get Service Address dan Default Server Event (Code) -> Get Next Participant.

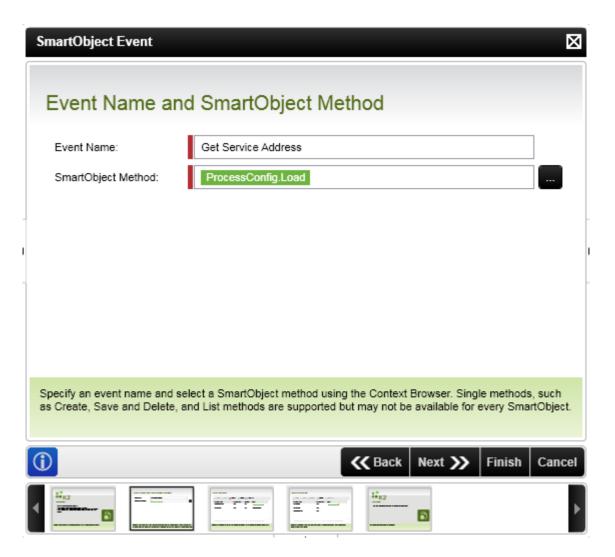


SmartObject - Get Service Address



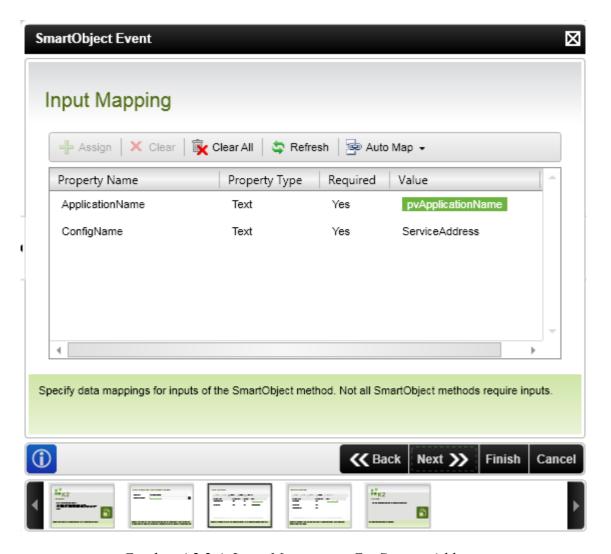
Gambar 4.2.2.2. SmartObject Event Get Service Address.

Klik Next. Gambar 4.2.2.2.



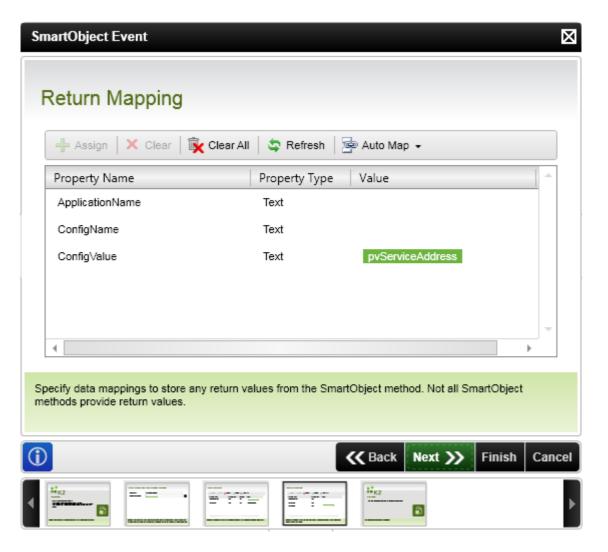
Gambar 4.2.2.3. Event Name dan SmartObject Method -> Get Service Address.

Klik Next. Gambar 4.2.2.3.



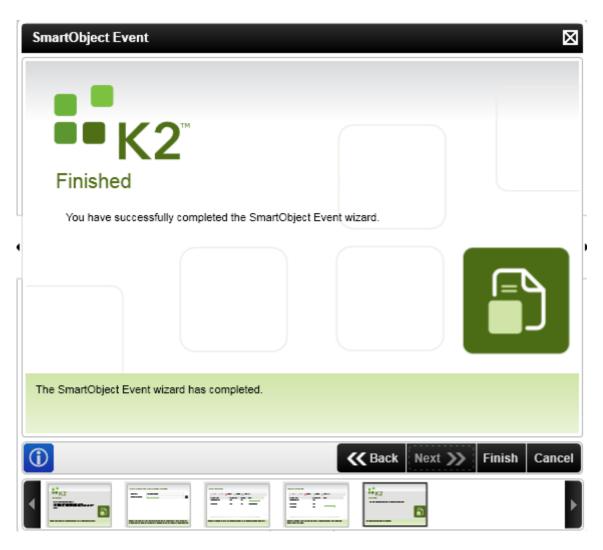
Gambar 4.2.2.4. Input Mapping -> Get Service Address.

Klik Next. Gambar 4.2.2.4.



Gambar 4.2.2.5. Return Mapping -> Get Service Address.

Klik Next.

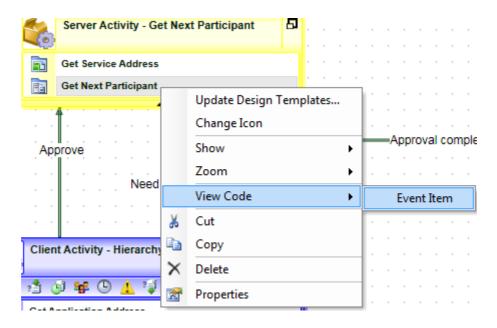


Gambar 4.2.2.6. Finished -> Get Service Address.

Klik Finish.

Default Server Event - Get Next Participant

Get Next Participant bertugas mengisi variable pvDomainParticipant dengan AdPositionId user yang akan melakukan client activity selanjutnya.



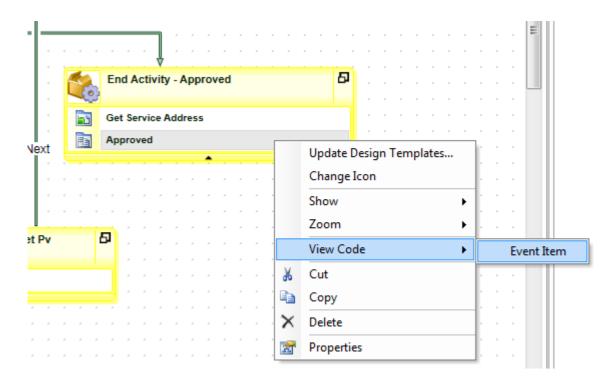
Gambar 4.2.2.7. View Code – Event Item -> Get Next Participant.

```
Get Next Participant.cs HRProcedure Approval.kprx
🛠 ExtenderProject_b3364d0b94ac422980582d7402052e65.Even 🔻
                                               Main(Project_b3364d0b94ac422980582d
     1 — using System;
        using System.ComponentModel;
        using System.ComponentModel.Design;
        using System.Collections;
        using System.Drawing;
        using SourceCode.KO;
        using SourceCode.Workflow.Common.Extenders;
        using hostContext = Project b3364d0b94ac422980582d7402052e65.Eve
     9
    10
        using System.ServiceModel;
    11
    12 Lusing MedcoEnergi.HRD.HRProcedureApproval;
    13
    14
    15 namespace ExtenderProject b3364d0b94ac422980582d7402052e65
    16 {
    17点
             public partial class EventItem 843ce112644e482e950e8d07dca09
    18
                 public void Main(Project_b3364d0b94ac422980582d7402052e6
    19 古
    20
                     BasicHttpBinding httpBinding = new BasicHttpBinding(
    21
                     httpDinding Committe Massacka ClientCradentialTema -
```

Gambar 4.2.2.8. Preview source code Get Next Participant.

Server Activity – Approved

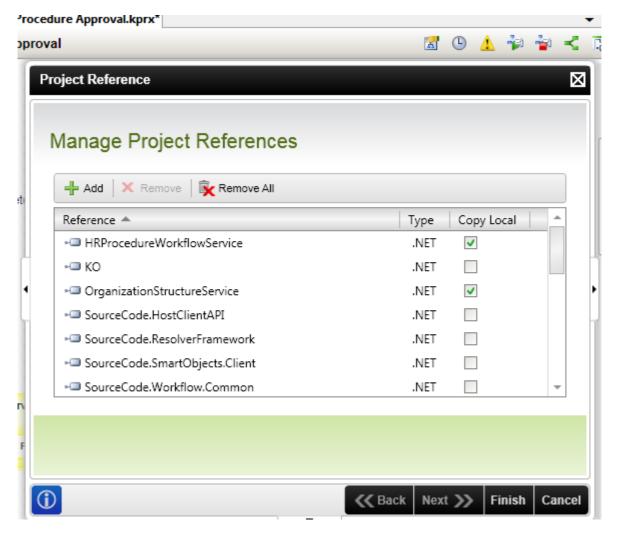
Code dalam Server Event Approved hanya memanggil service. Dan service bertugas untuk mengupdate field status menjadi 1 pada aplikasi HRProcedure Approval.



Gambar 4.2.2.9. View Code – Event Item -> Approved.

```
Approved.cs HRProcedure Approval.kprx
🔧 ExtenderProject_b3364d0b94ac422980582d7402052e65.Even 🔻
                                               Main(Project_b3364d0b94ac422980582d7402052e65.Eve
    13
    14
    15 namespace ExtenderProject b3364d0b94ac422980582d7402052e65
    16 {
    17占
             public partial class EventItem 928adec4b50b4fab808d6f12cd89d01e : ICod
    18
    19占
                 public void Main(Project b3364d0b94ac422980582d7402052e65.EventIte
    20
                     BasicHttpBinding httpBinding = new BasicHttpBinding(BasicHttpS
    21
    22
                     httpBinding.Security.Message.ClientCredentialType = BasicHttpM
    23
                     httpBinding.Security.Transport.ClientCredentialType = HttpClie
    24
    25
                     HRProcedureWorkflowServiceClient procedureClient = new HRProce
    26
                         httpBinding,
    27
                         new EndpointAddress (K2.ProcessInstance.DataFields["pvServi
    28
    29
                     try
    30
    31
                         procedureClient.DoApproveHRProcedureApproval(K2.ProcessIns
    32
    33
                     finally
    34
                         procedureClient.Close();
    35
```

Gambar 4.2.2.10. Preview source code Approved.



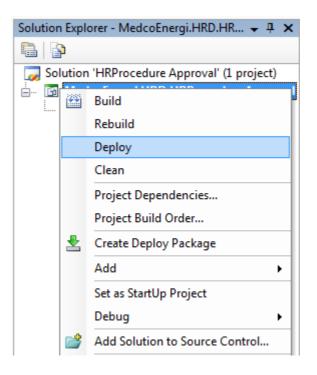
Gambar 4.2.2.11. Manage Project References -> Approved.

Untuk dapat menambah Reference di atas K2 blackpearl update juga harus terinstall.

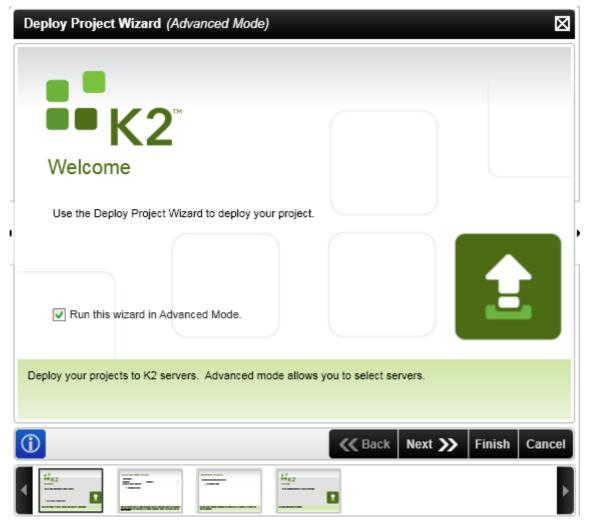


Gambar 4.2.2.12. K2 blackpearl update.

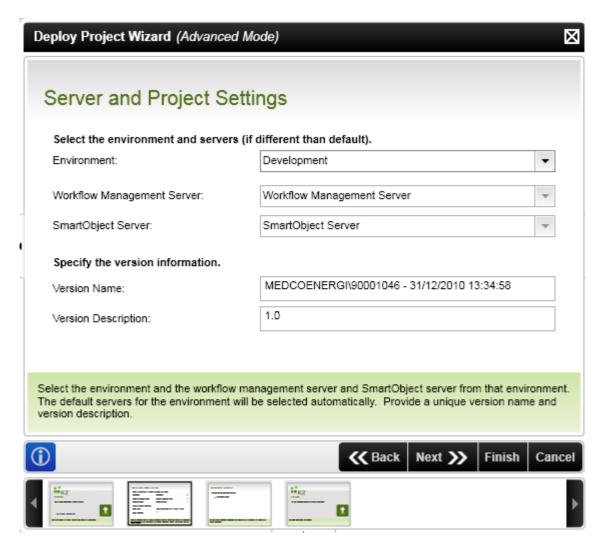
4.3. Deploy Flow



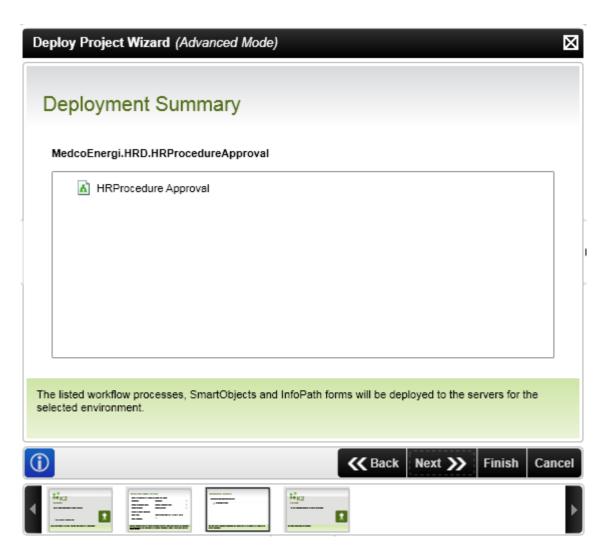
Gambar 4.3.1. Deploy Flow.



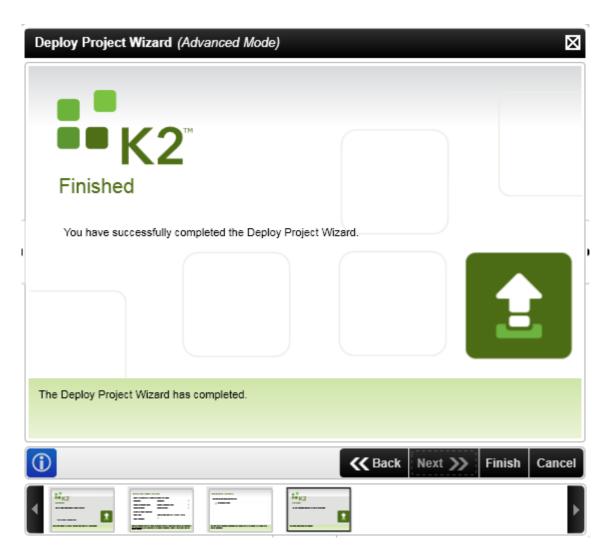
Gambar 4.3.2. Deploy Flow.



Gambar 4.3.3. Deploy Flow. Environtment Development untuk server tenk2d91.

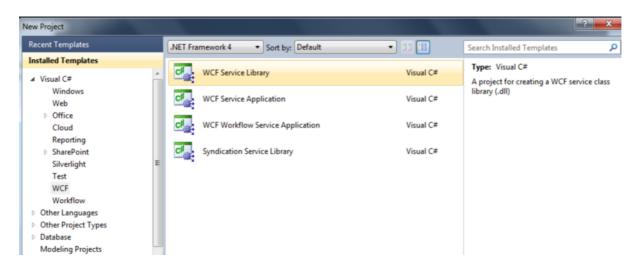


Gambar 4.3.4. Deployment Summary.

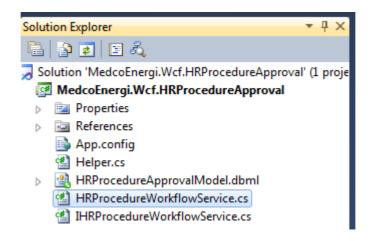


Gambar 4.3.5. Finished Deploy Flow.

4. HRProcedure Approval Service

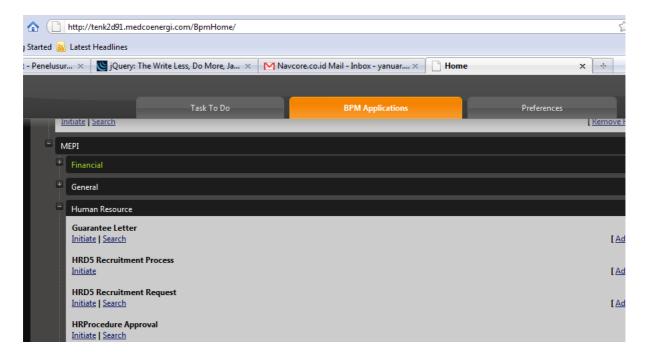


Gambar 5.1. New Project Wcf Service Library.

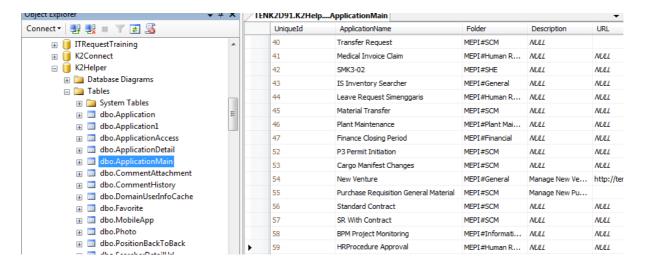


Gambar 5.2. Solution Eksplorer.

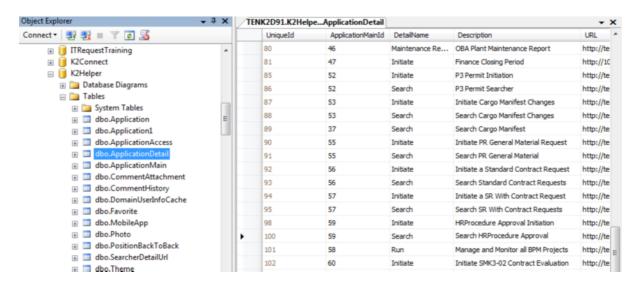
5. Integrating to BPM HOME



Gambar 6.1. Menambahkan ke BPM HOME.



Gambar 6.2. Database K2Helper - table ApplicationMain.



Gambar 6.2. Database K2Helper - table ApplicationDetail.

1. Web Form Development

- a. Create BPM 3 Project
- b. Add Connection to Web.Config
- c. Create Initiation Form
 - i. Load Initial Data
 - ii. Validate Input Data
 - iii. Save Input Data to Database
- d. Create Approval Form
 - i. Load Saved Data

2. Flow Development

- a. Create Simple Flow
- b. Add Activity
- c. Add Action
- d. Assign Participant
- e. Add Code Behind
- f. Deploy Flow

3. Form and Flow Integration

- a. Add flow execution to Initiation Form
- b. Add flow execution to Approval Form

4. Searcher / Tracking Page

- a. Create sql view for searcher
- b. Create list form to search
- c. Create detail form (= approval form)

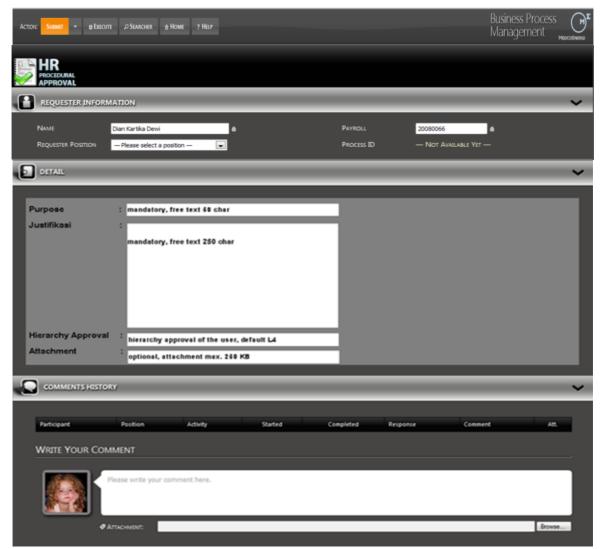
5. Integrating to BPM HOME

- a. Add to Process Initiation Page
- b. Add to Task To Do Page
- c. Add to Searcher Page

6. Running Aplikasi HR Procedure Approval

Pada bagian ini akan dijelaskan mengenai blue print aplikasi dan sekilas *running* aplikasi.

6.1. Blue print HRProcedure Approval



Gambar 1.1.1. Blue Print user inteface aplikasi HRProcedure Approval.

Proses:

- 1. *Initiator* melakukan inisiasi proses.
- 2. *Initiator* mengisikan data:

Purpose

Justifikasi

Hierarchy Approval

Attachment (jika ada)

- 3. Submit, route sesuai hierarchy approval.
- 4. Selesai.

Otorisasi/initiator Aplikasi HRProcedure Approval:

- PAYROLL MANAGEMENT ANALYST 1 positionId 0050003469
- PAYROLL MANAGEMENT ANALYST 2 positionId 0050003476

- PAYROLL MANAGEMENT ANALYST 3 positionId 0050005001
- PAYROLL MANAGEMENT ANALYST 4 positionId 0050005918
- GROUP LEAD OF COMPENSATION & PAYROLL MANAGEMENT positionId 0050005906

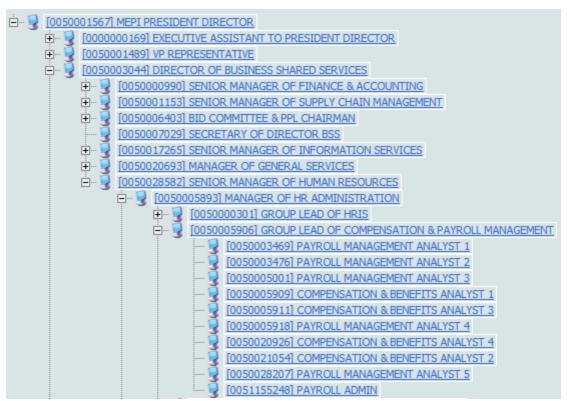
Field Hierarchy Approval itu adalah untuk memilih, jadi misalnya initiatornya Payroll Management Analyst 1, maka di *field* itu muncul *selection hierarchy* di atasnya, tetapi *field* itu default terisi posisi L4 (level 4).

Contoh:

Initiator: Payroll Management Analyst 4, maka sesuai *hierarchy*-nya, *selection* di *screen* inisiasi bisa dia milih dari Group Lead of Compensation and Payroll Management, sampai MEPI PRESIDENT DIRECTOR, tetapi default di screen itu adalah L4 yaitu Manager of HR Administration.

Kemudian flow nya akan ke Group Lead of Compensation & Payroll Management dan kemudian ke Manager of HR Administration.

Struktur organisasi dan aturan Hierarchy Approval (saya artikan: aliran form) dapat dilihat pada gambar 1.1.2.



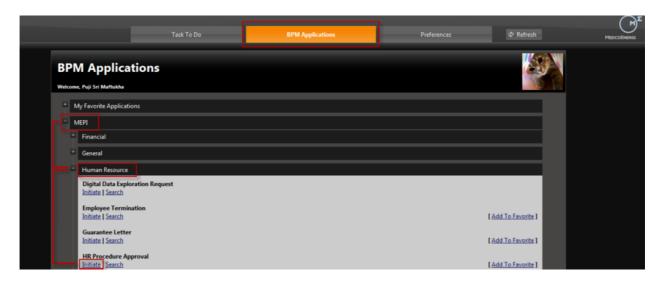
Gambar 1.1.2. Struktur organisasi MEPI.

6.2 Menjalankan HR Procedure Approval di Tenk2D91

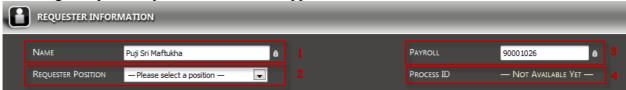
Ketik URL: http://tenk2d91.medcoenergi.com/BpmHome/

1. Untuk membuka application HR Procedure Approval:
Pada BPM Applications, klik button [+] untuk meng-collapse aplikasi under MEPI.

klik **MEPI** >> **Human Resource** >> **Initiate** (pada bagian HR Procedure Approval)

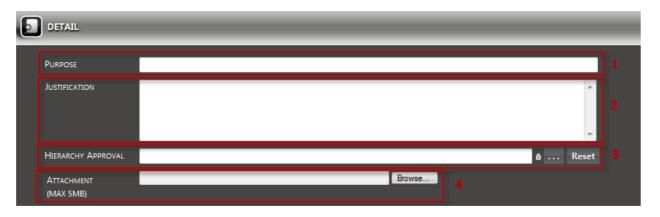


2. Pengisian pada Prepare HR Procedure Approval



REQUESTER INFORMATION

- 1. Requester Name Requester Name akan terisi otomatis
- 2. Requester Position Silahkan memilih posisi sesuai dengan yg diinginkan.
- 3. Requester Payroll Requester Name akan terisi otomatis
- 4. Process ID Belum ada. Akan otomatis tergenerate setelah Submit.



DETAIL

1. Purspose

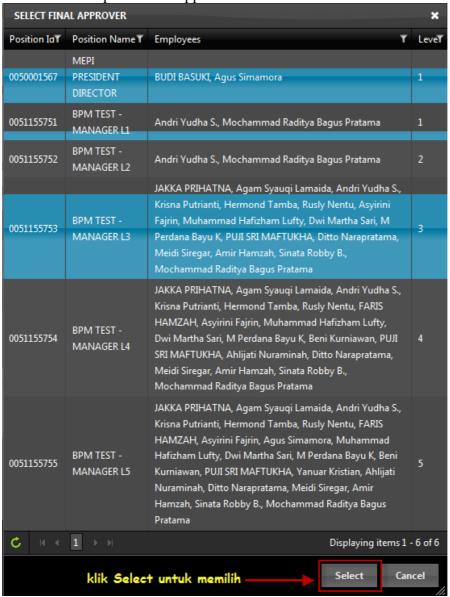
Silakan isikan tujuan request yang dilakukan. Purpose adalah mandatory.

2. Justification

Silakan isikan justifikasi request yang dilakukan. Justification adalah mandatory.

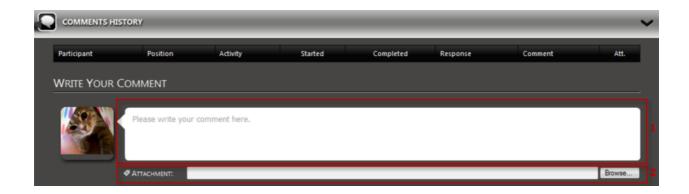
3. Hierarchy Approval

Pilih salah satu posisi final approver dan kemudian klik Select untuk memilih.



4. Attachment

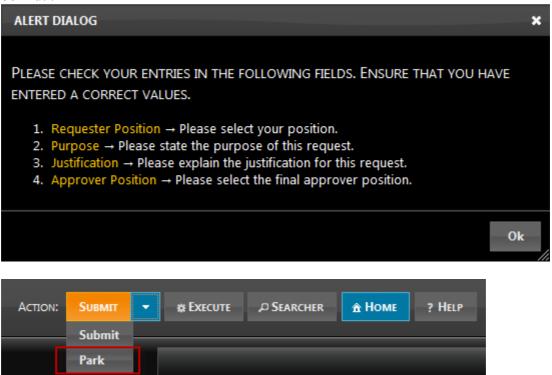
Silakan masukan file yang akan diattach. Maximum file 5 MB.



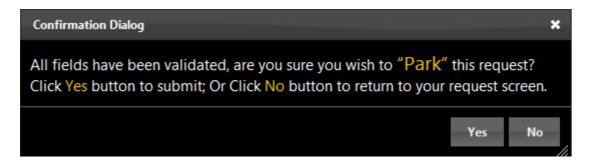
COMMENTS HISTORY

- 1. Silahkan tulis komentar anda, sertai dokumen attachment jika ada yang ingin dilampirkan. Jika semua isian telah dilengkapi, silahkan pilih action menu *Submit* atau *Park* yang ada di kiri atas, kemudian klik *Execute*.
- 2. Attach file bila perlu.

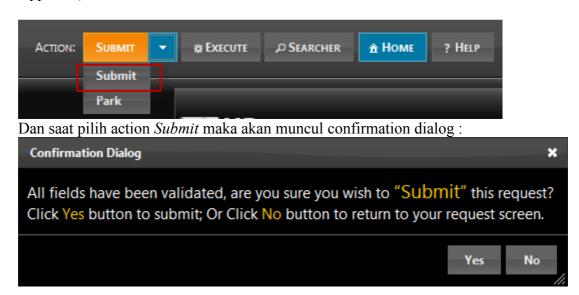
Apabila ada field mandatory yang tidak terisi maka akan muncul message alert seperti berikut :



Apabila semua field telah terisi dan pilih *Park* maka akan muncul confirmation dialog :

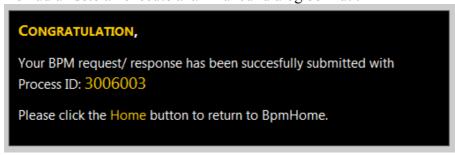


Setelah klik Yes, maka aplikasinya akan ada di Task To Do Initiator. Dengan arti bahwa action Park dapat memungkinkan untuk Initiator melakukan perubahan terhadap request yang dilakukan sebelum lanjut ke proses selanjutnya (Hierarchy Approval).

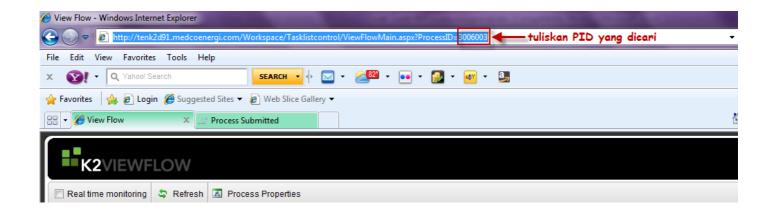


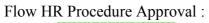
Setelah klik Yes, maka aplikasinya akan ada di Task To Do Hierarchy Approval. Dan akan berakhir pada posisi approver yang dipilih pada saat melakukan prepare (field Hierarchy Approval).

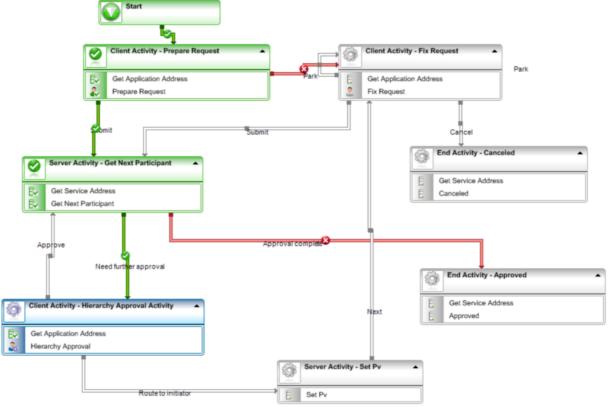
Kemudian setelah execute akan muncul dialog berikut:



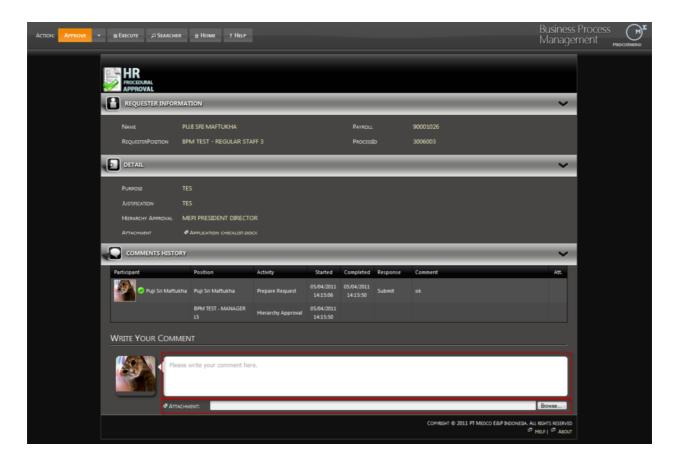
Aliran flow HR Procedure Approval dapat dilihat di:





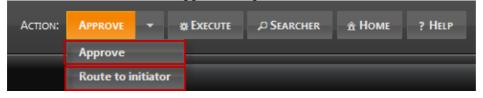


Tampilan form pada flow Hierarchy Approval HR Procedure Approval:



Pada activity ini, approver hanya bisa melakukan review dan menuliskan comment sebagai reviewnya, dan dapat mengattach dokumen bila perlu.

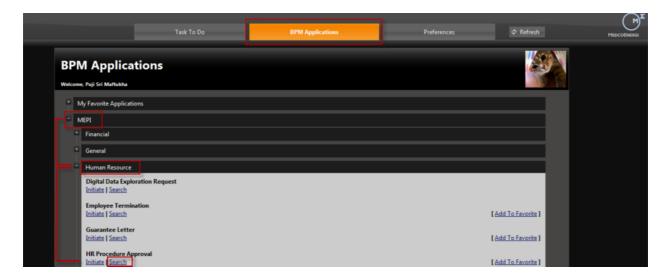
Setelah dilakukan review, approver dapat melakukan dua action berikut :



Apabila *Approve*, maka aplikasinya akan berada di Task To Do approver selanjutnya, yaitu berada pada level satu tingkat di atas approver sebelumnya. Dan apabila *Route To Initiator*, maka aplikasinya akan kembali ke intiator yang melakukan request. Begitu selanjutnya sampai pada final approver.

Searcher HR Procedure Approval

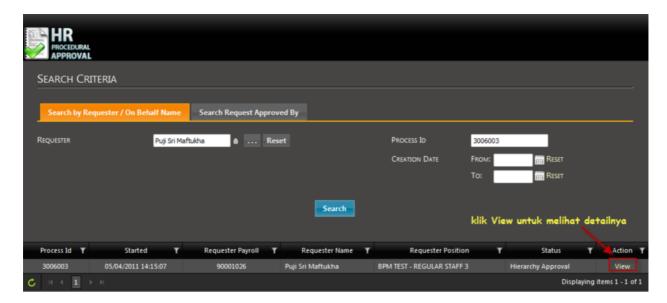
Untuk membuka Searcher application HR Procedure Approval:
 Pada BPM Applications, klik button [+] untuk meng-collapse aplikasi under MEPI.
 Klik MEPI >> Human Resource >> Search (pada bagian HR Procedure Approval)



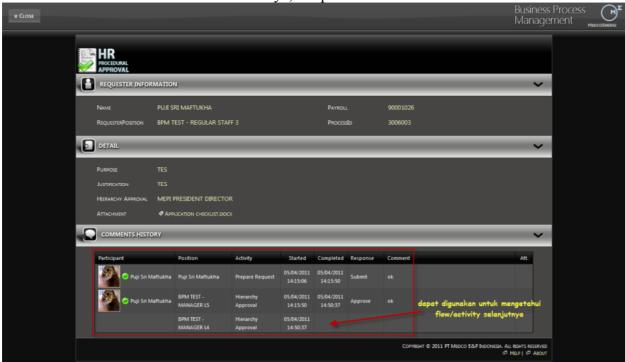
2. Tampilan form Searcher HR Procedure Approval:



Silakan isi field Process Id dan Creation Date untuk mencari data, atau hanya dapat mengisi salah satu field yang ada. Klik *Search* untuk menampilkan data yang dicari.



Kemudian klik View untuk melihat detailnya, tampilan view detail:



Searcher juga berfungsi sebagai pengecekan flow/activity selanjutnya dari aplikasi yang berjalan berdasarkan comment history yang ada pada detail searcher.