Enterprise Integration, iPaaS and Enterprise Service Business

Shane Petersen, Technology Architect, TechnologyOne

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26 July 2018

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Agenda

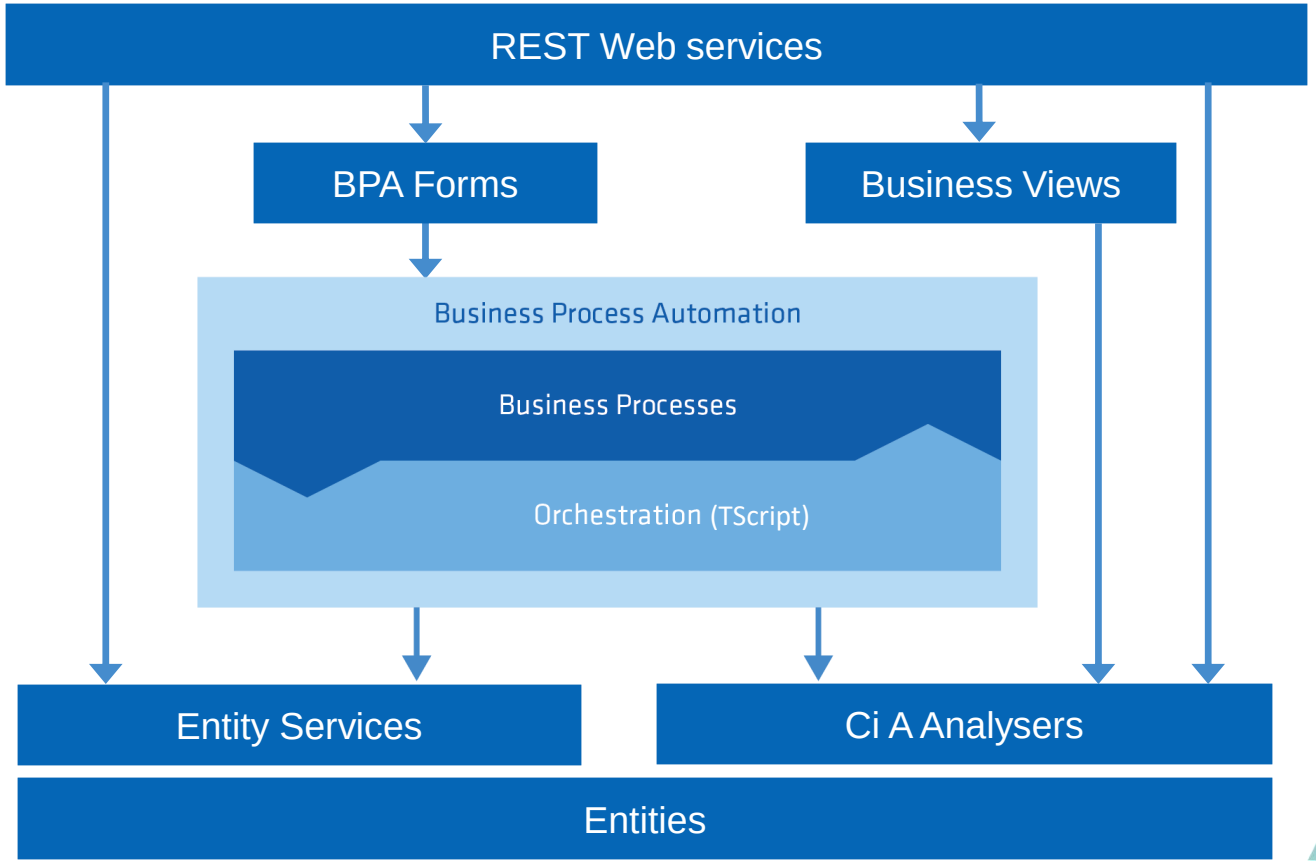
Enterprise Integration
- Ci A Web Services Architecture
- Integration Capabilities

iPaaS and ESB

Integration example

Futures

Ci A Web Services Architecture



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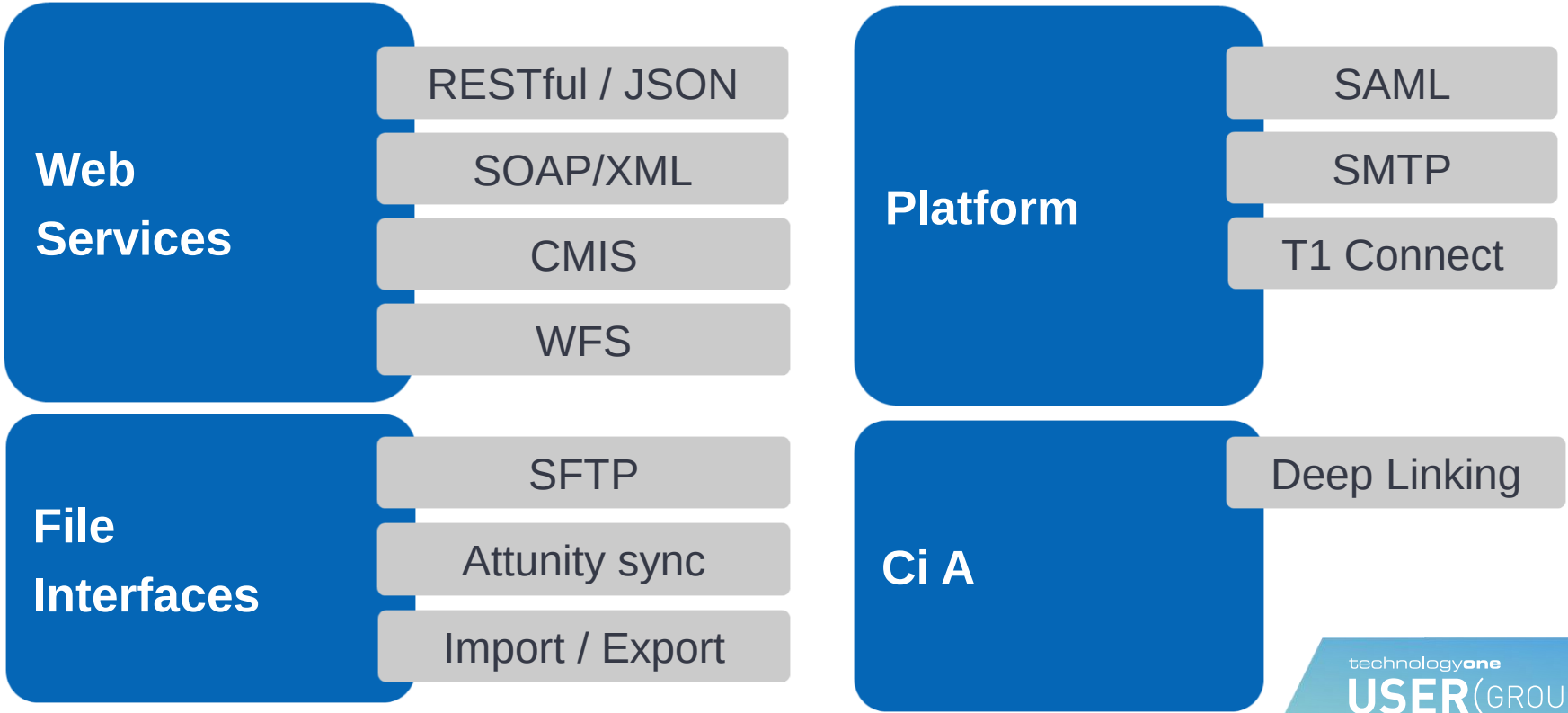
Enterprise Integration Capabilities



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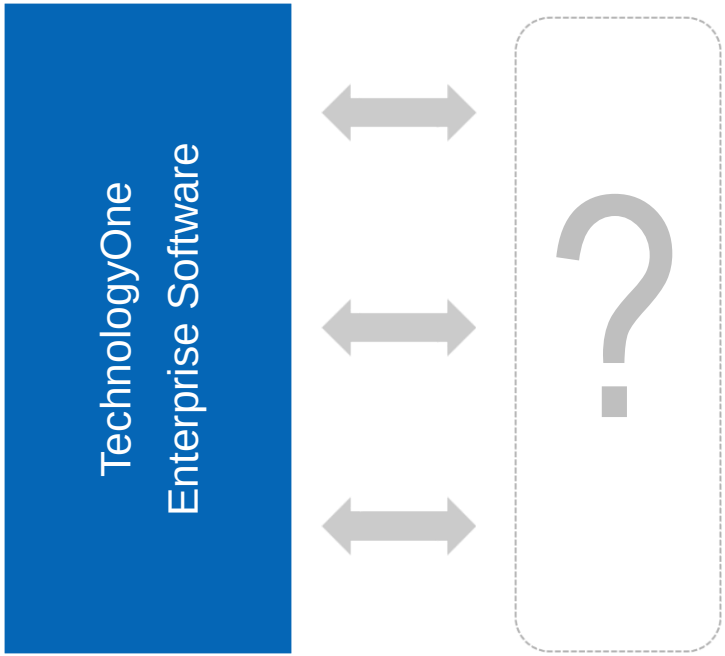
iPaaS and ESB

Integration Challenges



Other Systems

SCADA	Network Design	Drawing Management	Engineering Collaboration	Environment Sust. Mgmt
Operational Monitoring	Contractor Systems	Other Service Provider Systems	Vegetation Management	External Reporting

- Propagating master records
- Supplier & Service provider system integration
- Some complex external interfaces and API's
- Legacy or bespoke systems integration
- 'Cloud to cloud' and 'cloud to on-premises'
- Increasing number of devices and Apps
- Interface change management

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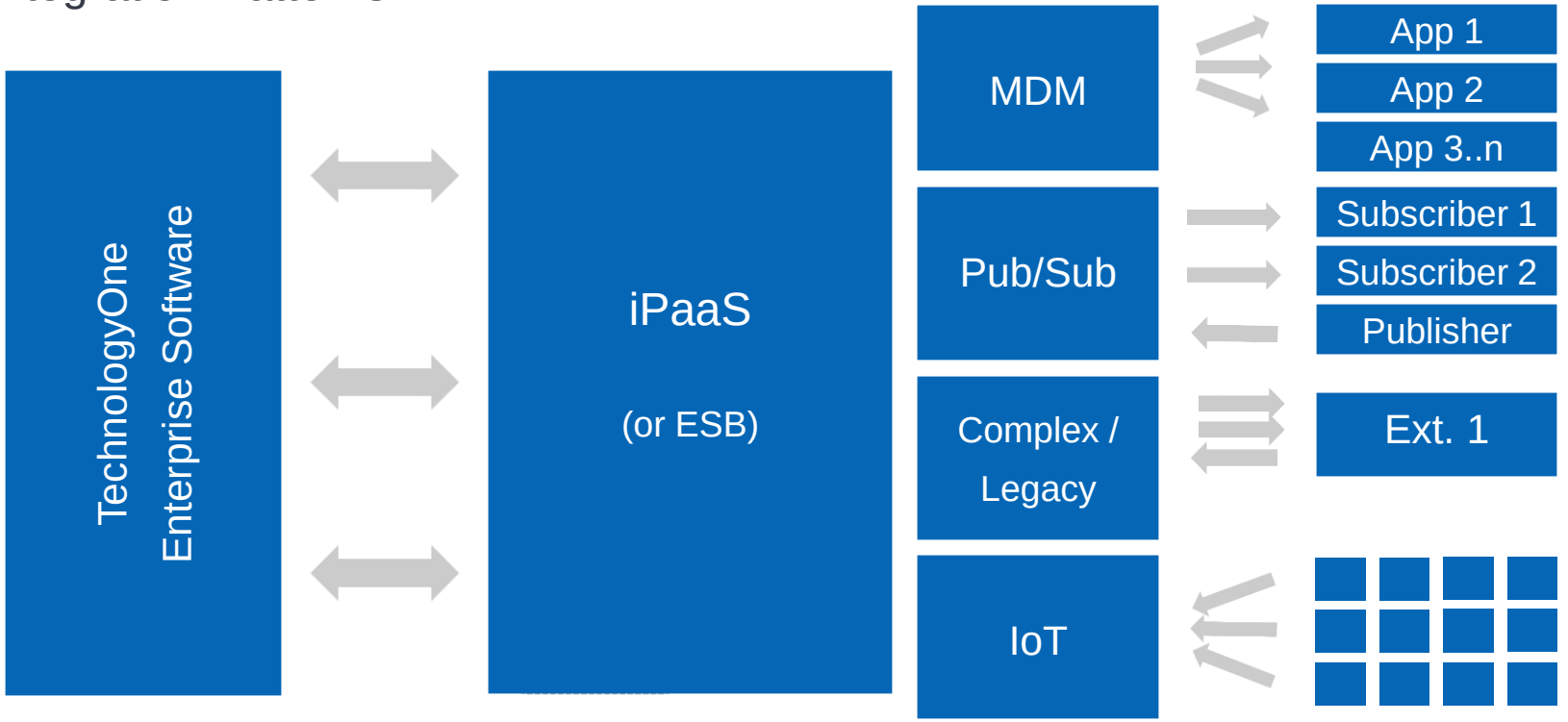
iPaaS and ESB

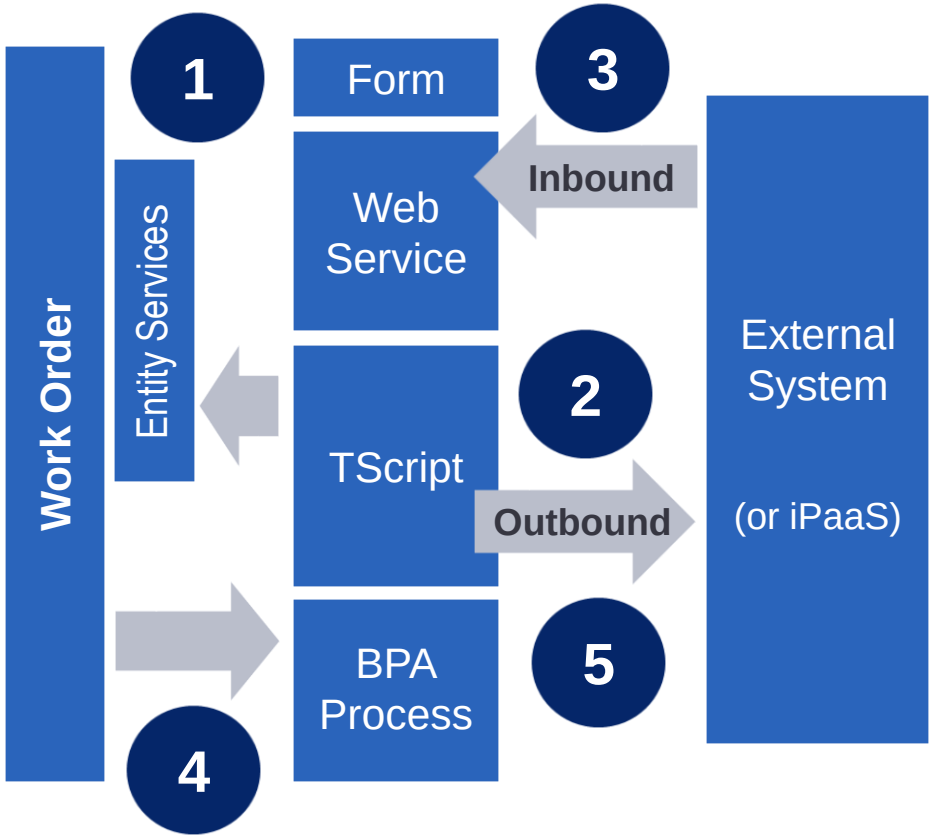
Integration Patterns



OneWater example

Use case...

- ***Inbound:*** Ci Anywhere web service to create a Work Order for SCADA Alarm
  - Direct call to entity service or indirect using a forms based web service (to simplify request)
- ***Outbound:*** call to external web service when a relevant Work Order is updated
  - Leverages BPA process integration to enable further extension and automation



Configuration steps …

Inbound Interface:

- Create a Form 1
- Add a TScript 2
- Expose a Web Service 3

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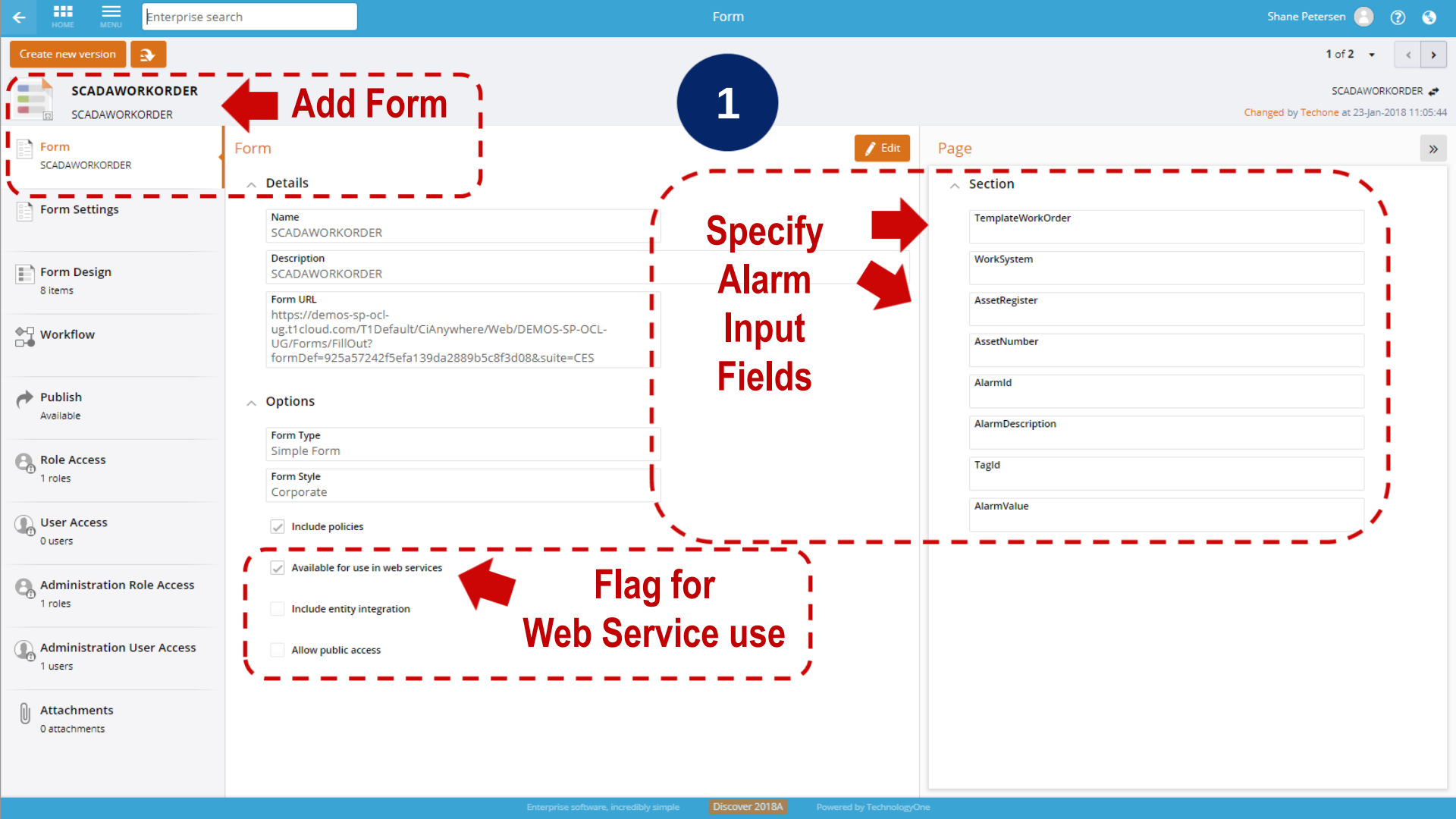
Enterprise search
Form
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Create new version
1 of 2
SCADAWORKORDER
SCADAWORKORDER
Add Form
1
SCADAWORKORDER
Changed by Techone at 23-Jan-2018 11:05:44
Form
SCADAWORKORDER
Form
Edit
Page
Details
Form Settings
Name
SCADAWORKORDER
Description
SCADAWORKORDER
Form URL
https://demos-sp-ocl-ug.t1cloud.com/T1Default/CiAnywhere/Web/DEMOS-SP-OCL-UG/Forms/FillOut?formDef=925a57242f5efa139da2889b5c8f3d08&suite=CES
Form Design
8 items
Workflow
Publish
Available
Options
Form Type
Simple Form
Form Style
Corporate
Include policies
Role Access
1 roles
User Access
0 users
Administration Role Access
1 roles
Administration User Access
1 users
Attachments
0 attachments
Specify Alarm Input Fields
Section
TemplateWorkOrder
WorkSystem
AssetRegister
AssetNumber
AlarmId
AlarmDescription
TagId
AlarmValue
Available for use in web services
Include entity integration
Allow public access
Flag for Web Service use
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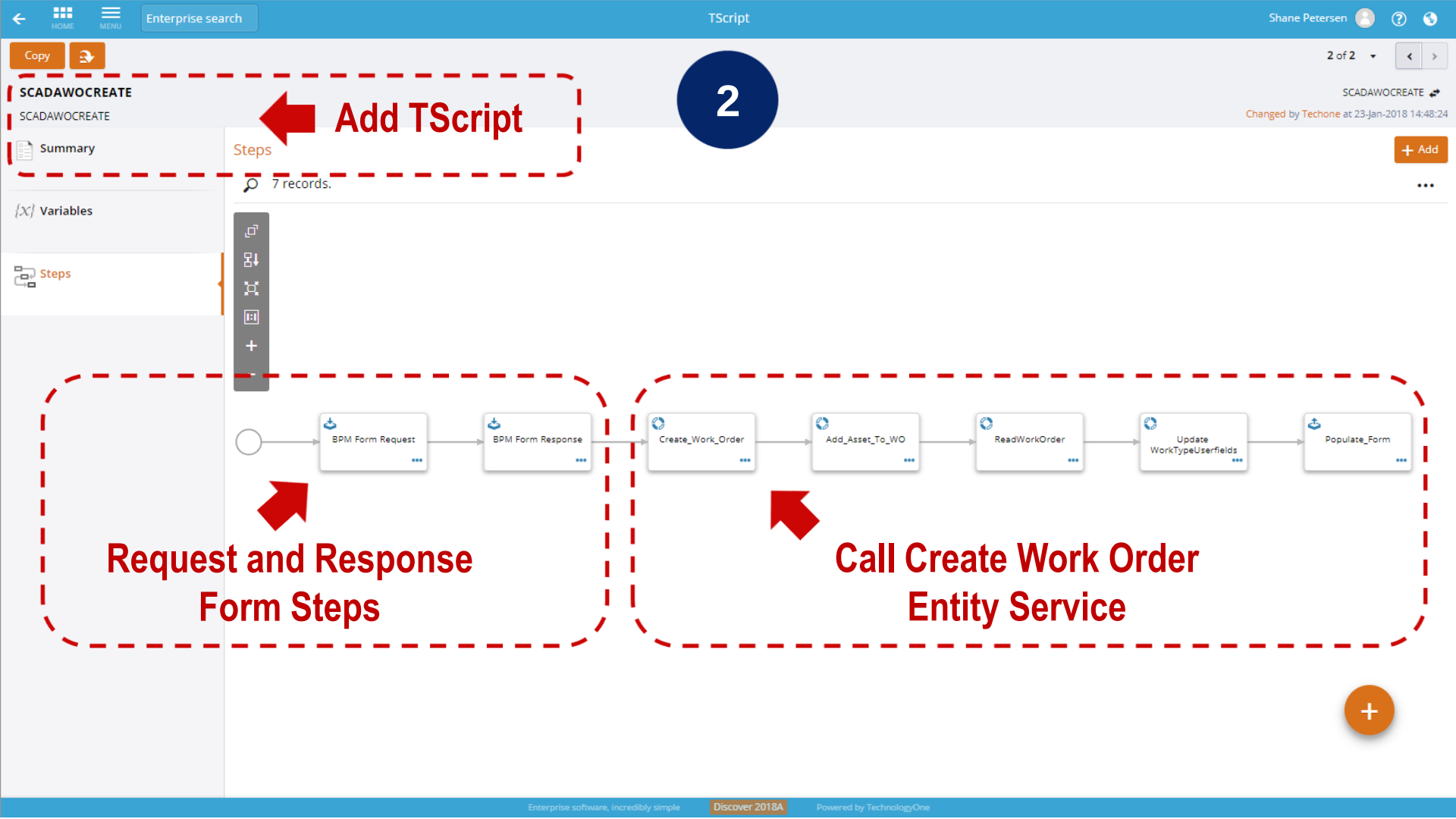
HOME
MENU
Enterprise search
TScript
Shane Petersen
Copy
2 of 2
SCADAWOCREATE
SCADAWOCREATE
Add TScript
2
SCADAWOCREATE
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Summary
Steps
Add
7 records.
Variables
Steps
BPM Form Request
BPM Form Response
Create_Work_Order
Add_Asset_To_WO
ReadWorkOrder
Update WorkTypeUserfields
Populate_Form
Request and Response Form Steps
Call Create Work Order Entity Service
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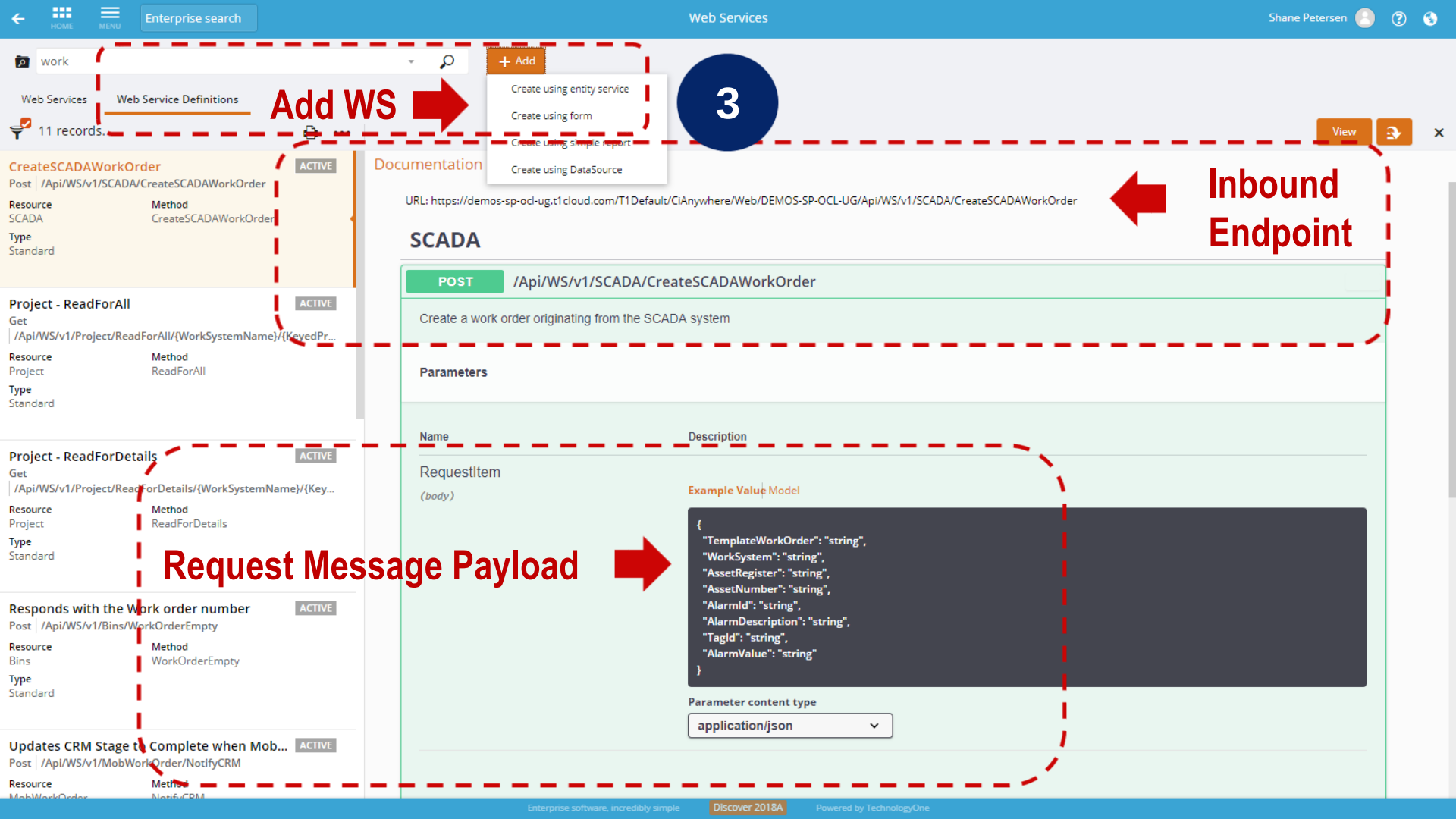
Enterprise search
Web Services
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work
Add
Create using entity service
Create using form
Create using simple report
Create using DataSource
Web Services
Web Service Definitions
Add WS
3
11 records.
View
CreateSCADAWorkOrder
ACTIVE
Post | /Api/WS/v1/SCADA/CreateSCADAWorkOrder
Resource
SCADA
Method
CreateSCADAWorkOrder
Type
Standard
Documentation
URL: https://demos-sp-ocl-ug.t1cloud.com/T1Default/CiAnywhere/Web/DEMOS-SP-OCL-UG/Api/WS/v1/SCADA/CreateSCADAWorkOrder
Inbound Endpoint
SCADA
POST
/Api/WS/v1/SCADA/CreateSCADAWorkOrder
Create a work order originating from the SCADA system
Parameters
Name
Description
RequestItem
(body)
Example Value
Model
{
"TemplateWorkOrder": "string",
"WorkSystem": "string",
"AssetRegister": "string",
"AssetNumber": "string",
"AlarmId": "string",
"AlarmDescription": "string",
"TagId": "string",
"AlarmValue": "string"
}
Parameter content type
application/json
Project - ReadForAll
ACTIVE
Get
/Api/WS/v1/Project/ReadForAll/{WorkSystemName}/{KeyedPr...
Resource
Project
Method
ReadForAll
Type
Standard
Project - ReadForDetails
ACTIVE
Get
/Api/WS/v1/Project/ReadForDetails/{WorkSystemName}/{Key...
Resource
Project
Method
ReadForDetails
Type
Standard
Request Message Payload
Responds with the Work order number
ACTIVE
Post | /Api/WS/v1/Bins/WorkOrderEmpty
Resource
Bins
Method
WorkOrderEmpty
Type
Standard
Updates CRM Stage to Complete when Mob...
ACTIVE
Post | /Api/WS/v1/MobWorkOrder/NotifyCRM
Resource
Method
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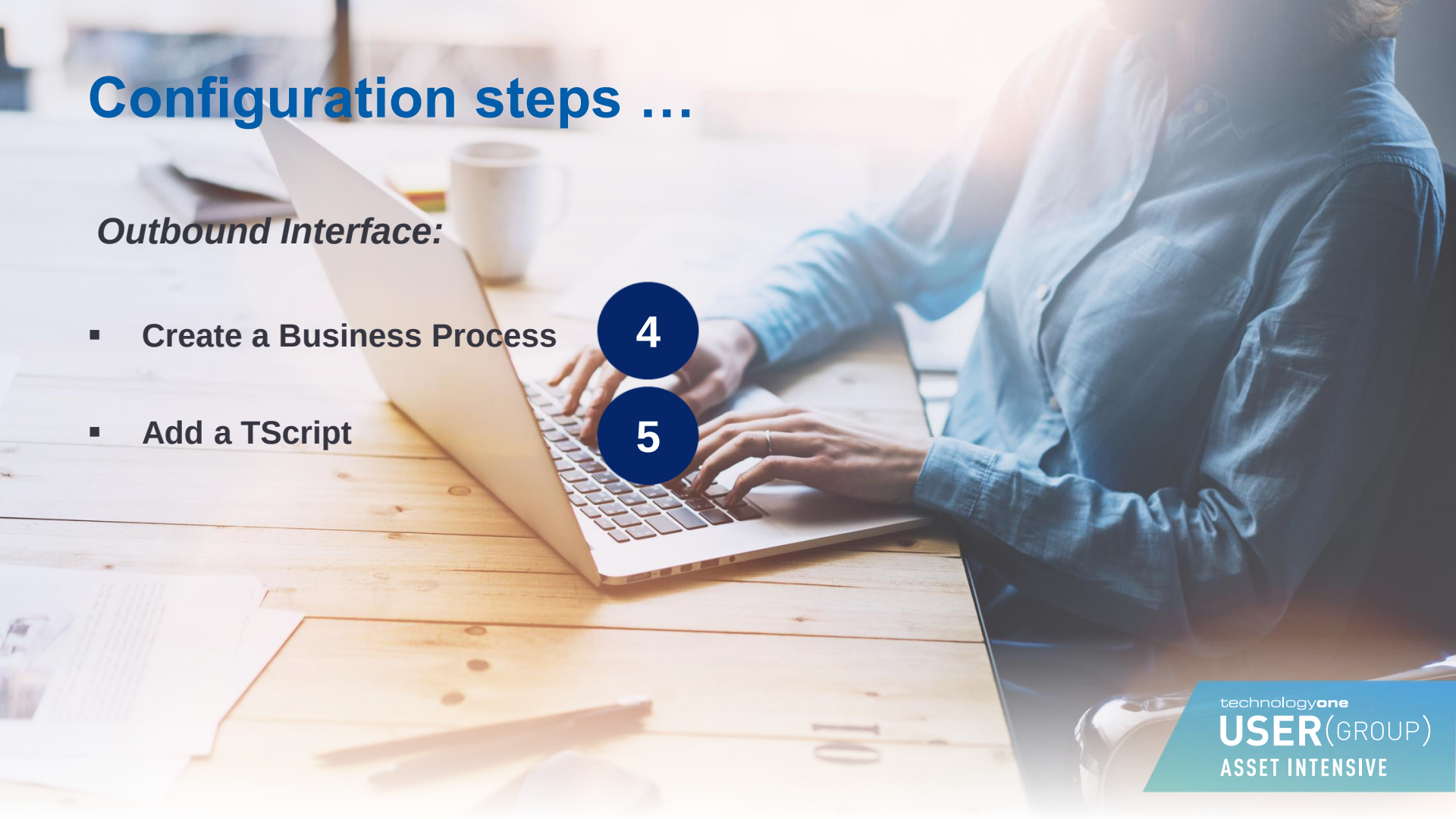
Configuration steps …

Outbound Interface:

- Create a Business Process 4
- Add a TScript 5



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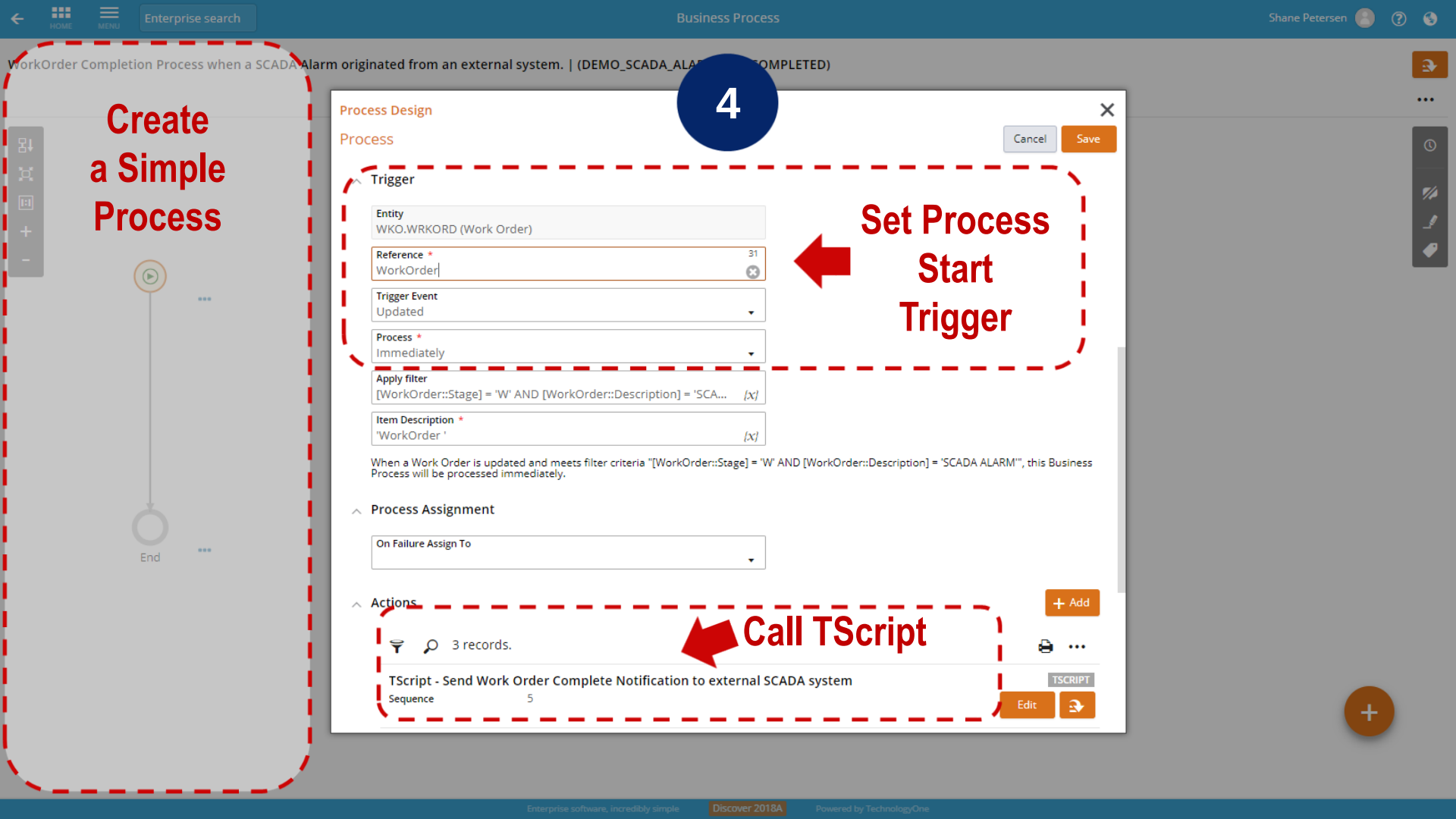
Enterprise search
Business Process
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WorkOrder Completion Process when a SCADA Alarm originated from an external system. | (DEMO_SCADA_ALA OMPLETED)
Create a Simple Process
End
4
Process Design
Process
Cancel
Save
Trigger
Entity
WKO.WRKORD (Work Order)
Reference *
31
WorkOrder
Trigger Event
Updated
Process *
Immediately
Set Process Start Trigger
Apply filter
[WorkOrder::Stage] = 'W' AND [WorkOrder::Description] = 'SCA...
Item Description *
'WorkOrder '
When a Work Order is updated and meets filter criteria "[WorkOrder::Stage] = 'W' AND [WorkOrder::Description] = 'SCADA ALARM'", this Business Process will be processed immediately.
Process Assignment
On Failure Assign To
Actions
Add
3 records.
Call TScript
TScript - Send Work Order Complete Notification to external SCADA system
TSCRIPT
Sequence
5
Edit
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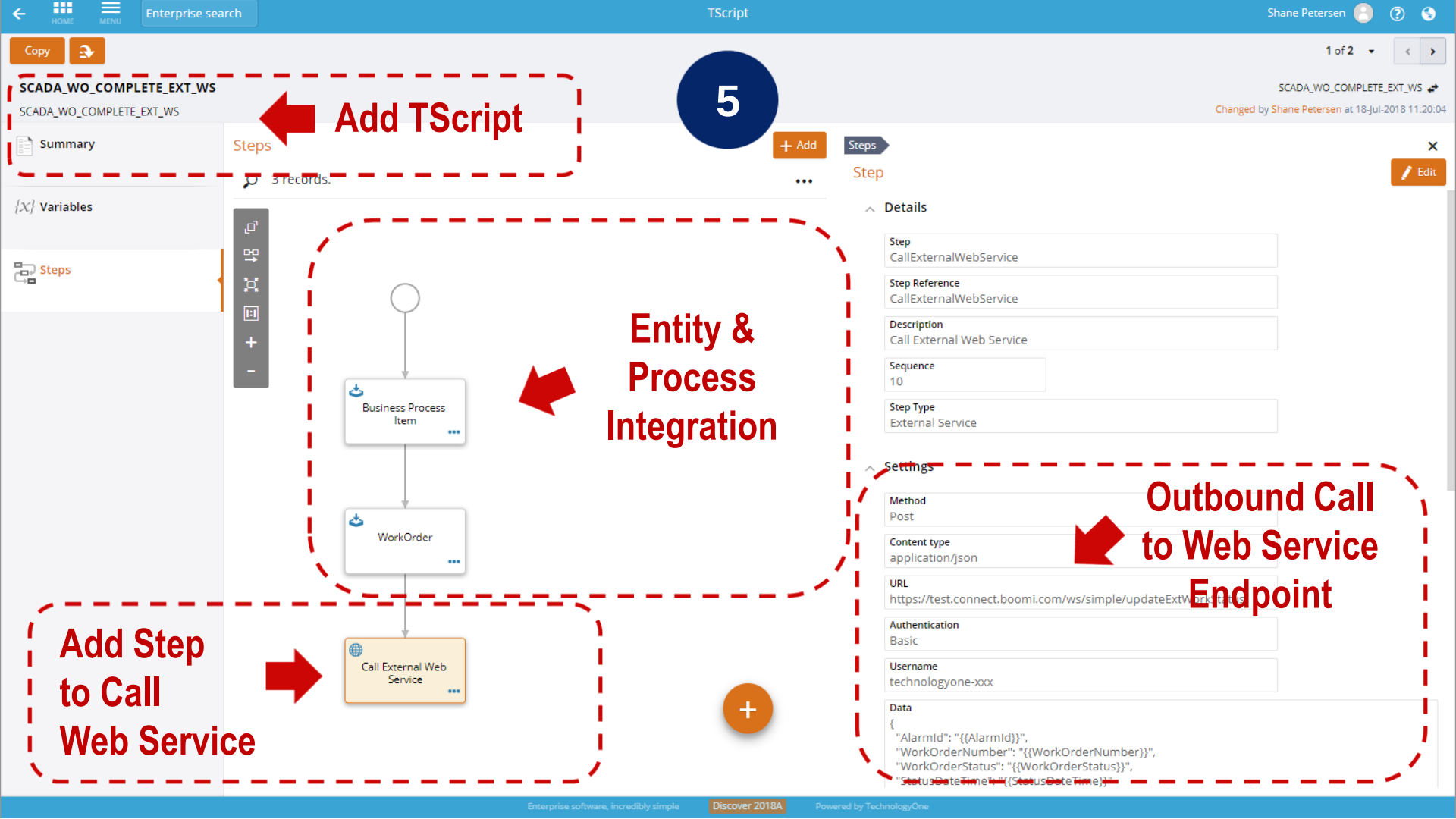
Enterprise search
TScript
Shane Petersen
Copy
1 of 2
SCADA_WO_COMPLETE_EXT_WS
SCADA_WO_COMPLETE_EXT_WS
Changed by Shane Petersen at 18-Jul-2018 11:20:04
Add TScript
5
Summary
Steps
Variables
Steps
3 records.
Add
Steps
Step
Edit
Details
Step
CallExternalWebService
Step Reference
CallExternalWebService
Description
Call External Web Service
Sequence
10
Step Type
External Service
Business Process Item
WorkOrder
Call External Web Service
Entity & Process Integration
Settings
Method
Post
Content type
application/json
URL
https://test.connect.boomi.com/ws/simple/updateExtWorkOrder
Authentication
Basic
Username
technologyone-xxx
Data
{
"AlarmId": "{{AlarmId}}",
"WorkOrderNumber": "{{WorkOrderNumber}}",
"WorkOrderStatus": "{{WorkOrderStatus}}",
Outbound Call to Web Service Endpoint
Add Step to Call Web Service
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Integration Futures

On the roadmap …

- OAUTH for CiA Web Services (planned for 2018B)
- Ci A ETL (planned for 2018B)
- Additional Entity Services (each release)

Already delivered …

- Trigger ETL processes via Ci A Web Services
- Create ETL step to read Ci A Analysers and Business Views
- Add TScripts to existing Ci Workflows
- BPA Forms with Classic Ci Workflow

Want more information on this session?

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