# ETRM workflow

Let’s understand the workflow of ETRM in nGenue through below flow diagram:

@startuml  
  
scale max 1000 width  
  
skinparam backgroundColor #F5F5F3  
skinparam Shadowing 10  
skinparam BoundaryBackgroundColor #ffffff  
skinparam BoundaryBorderColor #4ca0d9  
skinparam DiagramBorderColor #F5F5F3  
skinparam BoundaryFontColor #0079c9  
skinparam BoundaryFontStyle bold  
skinparam defaultTextAlignment center  
skinparam SequenceMessageAlign center  
skinparam ReferenceBorderThickness 2  
skinparam padding 2  
skinparam roundCorner 20  
skinparam ActorShadowing false  
skinparam TitleFontColor #000000  
skinparam TitleFontSize 18  
skinparam BoxPadding 10  
  
skinparam default {  
 FontName Inter-SemiBold, SansSerif, sans-serif  
 FontStyle plain  
 FontSize 12  
}  
  
skinparam actorStyle awesome  
  
skinparam sequence {  
  
'Users and boundries (DBS for example)  
 ActorBorderThickness 1  
 ActorBorderColor ##0079c9  
 ActorBackgroundColor #0079c9  
 ActorFontColor #0079c9  
 ActorFontName Roboto, SansSerif, sans-serif  
 ActorFontStyle bold  
  
 AgentBackgroundColor red  
  
'Arrows  
 ArrowFontColor #616161  
 ArrowColor #616161  
 ArrowThickness 2  
  
 RectangleBorderThickness 3  
  
  
'Capability  
 BoxFontColor #000000  
 BoxFontName Roboto, SansSerif, sans-serif  
 BoxFontStyle bold  
 BoxFontSize 14  
  
 BoxBackgroundColor #e9eaeb  
 BoxBorderColor transparent  
  
 BoundaryBackgroundColor #1281ac  
 BoundaryBorderColor #1281ac  
 BoundaryFontColor #1281ac  
 BoundryFontName Roboto, SansSerif, sans-serif  
 BoundaryStereotypeFontColor #616161  
  
 ClassBorderColor #1281ac  
 ComponentBorderColor #1281ac  
  
' Lifelines and dividers/separators  
 DividerBackgroundColor #f5f5f5  
 DividerBorderColor #a2a2a2  
 DividerBorderThickness 1  
 DividerFontColor #616161  
 DividerFontName Roboto, SansSerif, sans-serif  
  
 LifeLineBorderColor #4ca0d9  
  
' Loops but not the title text  
 GroupBorderColor #4CA0D9  
 GroupBorderThickness 1  
 GroupFontName Roboto, SansSerif, sans-serif  
 GroupFontColor #0079c9  
 GroupBackgroundColor #D9EBF6  
 GroupBodyBackGroundColor #FFFFFF  
  
'Title text for loops  
 GroupHeaderFontColor #000000  
 GroupHeaderFontName Roboto, SansSerif, sans-serif  
 GroupHeaderFontStyle bold  
  
'Services  
 ParticipantBorderColor #4ca0d9  
 ParticipantBackgroundColor white  
 ParticipantFontSize 12  
 ParticipantFontStyle bold  
 ParticipantFontName Roboto, SansSerif, sans-serif  
 ParticipantFontColor #0079c9  
 ParticipantBorderThickness 1  
 StereotypeFontColor #616161  
  
 ReferenceBorderThickness 2  
  
  
' SwimlaneBorderThickness 2  
  
 TitleFontColor #1281ac  
 TitleFontName Roboto, SansSerif, sans-serif  
 TitleFontSize 18  
 TitleBorderThickness 5  
  
}  
skinparam interface {  
 BackgroundColor #FFFFFF  
 BorderColor #1281ac  
 BorderThickness 1  
 FontColor #1281ac  
 FontName Roboto, SansSerif, sans-serif  
 FontSize 14  
 FontStyle bold  
  
}  
  
skinparam note {  
  
 BackgroundColor #d9ebf6  
 BorderColor #1281ac  
 BorderThickness 1  
  
 RoundCorner 0  
  
 StartColor #00548c  
 BarColor #00548c  
 EndColor #00548c  
  
 FontColor #000000  
 FontStyle plain  
 FontSize 12  
 FontName Roboto, SansSerif, sans-serif  
  
}  
  
skinparam activity {  
  
 BackgroundColor #FFFFFF  
 DiamondBackgroundColor #FFFFFF  
 DiamondBorderColor #1281ac  
 BorderColor #1281ac  
 BorderThickness 4  
  
 DiamondFontColor #1281ac  
 DiamondFontName Roboto, SansSerif, sans-serif  
 DiamondFontSize 12  
  
 StartColor #1281ac  
 BarColor #1281ac  
 EndColor #1281ac  
  
 FontColor #1281ac  
 FontName Roboto, SansSerif, sans-serif  
 FontSize 14  
 FontStyle bold  
  
}  
  
skinparam rectangle {  
  
 BorderColor #4ca0d9  
 BackgroundColor white  
 FontSize 12  
 FontStyle bold  
 FontName Roboto, SansSerif, sans-serif  
 FontColor #0079c9  
 BorderThickness 1  
  
 StartColor #00548c  
 BarColor #00548c  
 EndColor #00548c  
  
}  
  
skinparam cloud {  
  
 BackgroundColor #FFFFFF  
  
 BorderColor #1281ac  
 BorderThickness 4  
  
 StartColor #1281ac  
 BarColor #1281ac  
 EndColor #1281ac  
  
 FontColor #1281ac  
 FontName Roboto, SansSerif, sans-serif  
 FontSize 14  
 FontStyle bold  
  
}  
  
skinparam class {  
  
 BackgroundColor #FFFFFF  
  
 BorderColor #1281ac  
 BorderThickness 1  
  
 StartColor #1281ac  
 BarColor #1281ac  
 EndColor #1281ac  
  
 FontColor #1281ac  
 FontName Roboto, SansSerif, sans-serif  
 FontSize 14  
 FontStyle bold  
  
  
  
}  
  
'For services  
skinparam component {  
  
 BorderColor #4ca0d9  
 BackgroundColor white  
 StereotypeFontColor #616161  
  
 FontSize 12  
 FontStyle bold  
 FontName Roboto, SansSerif, sans-serif  
 FontColor #0079c9  
 BorderThickness 1  
  
}  
  
  
  
'databases  
skinparam database {  
  
 BackgroundColor #ffffff  
  
 BorderColor #4ca0d9  
 BorderThickness 1  
  
 FontColor #0079c9  
 FontName Roboto, SansSerif, sans-serif  
 FontSize 12  
 FontStyle bold  
  
}  
  
  
'For Capabilities  
skinparam frame {  
  
 StereotypeFontColor #616161  
  
 BorderColor #4CA0D9  
 BorderThickness 1  
 FontName Roboto, SansSerif, sans-serif  
 FontColor #0079c9  
 FontStyle bold  
 BackgroundColor #FFFFFF  
 BodyBackGroundColor #FFFFFF  
}  
  
' External systems in architecture diagrams  
skinparam node {  
  
 BorderThickness 1  
 BackgroundColor #FFFFFF  
 BorderColor #4ca0d9  
  
 FontColor #0079c9  
 FontName Roboto, SansSerif, sans-serif  
 FontSize 12  
 FontStyle bold  
  
}  
  
skinparam package {  
 BorderThickness 1  
 BackgroundColor #FFFFFF  
 BorderColor #1281ac  
  
 FontColor #1281ac  
 FontName Roboto, SansSerif, sans-serif  
 FontSize 12  
 FontStyle bold  
  
}  
  
' Activity diagrams, for different capabilities  
  
skinparam partition {  
  
 BackgroundColor #f3f3f3  
  
 BorderColor #1281ac  
 BorderThickness 2  
  
 FontColor #1281ac  
 FontName Roboto, SansSerif, sans-serif  
 FontSize 12  
 FontStyle bold  
  
}  
  
  
skinparam file {  
 BorderThickness 1  
 BackgroundColor #FFFFFF  
 BorderColor #1281ac  
  
 FontColor #1281ac  
 FontName Roboto, SansSerif, sans-serif  
 FontSize 12  
 FontStyle bold  
  
}  
  
' ref (erences)  
skinparam sequenceReferenceBorderColor #4ca0d9  
skinparam sequenceReferenceBackgroundColor #ffffff  
skinparam sequenceReferenceHeaderBackgroundColor #d9ebf6  
  
skinparam queue {  
 BackgroundColor #ffffff  
 BorderThickness 1  
 BorderColor #4ca0d9  
 FontColor #0079c9  
 FontStyle italic  
}  
  
skinparam legend {  
BackgroundColor #ffffff  
}  
  
start  
  
:Create a deal;  
note right  
The process starts with creating a deal and verifying configurations.  
end note  
  
if (Are configurations complete?) then (No)  
 :Configure prerequisites;  
 note right  
 Prerequisite configurations are mandatory before proceeding.  
   
 Prerequisites include:  
 - Configure legal entity, business unit, strategy, and portfolio  
 - Configure supply region  
 - Configure pipeline, pipeline location, and pipeline zone  
 - Configure counterparty  
 - Create rate schedule  
 end note  
 :Configurations completed;  
else (Yes)  
 :Proceed to deal type selection;  
endif  
  
if (Deal type?) then (buy deal)  
 :Create buy deal;  
else (sell deal)  
 :Create sell deal;  
endif  
  
:Create transport contract;  
note right  
Defines terms for natural gas movement.  
end note  
  
:Proceed to nominations;  
 repeat  
 :Select nomination type;  
 note right  
 Nomination types available:  
   
 - \*\*Buy nominations\*\*: Requests related to purchased natural gas being transported or stored.  
 - \*\*Sell nominations\*\*: Requests related to sold natural gas being transported to the buyer.  
 - \*\*Interconnects\*\*: Nominations specifying natural gas flow between different pipeline systems or facilities.  
 - \*\*Pool and storage\*\*: Nominations involving injection into or withdrawal from storage facilities or pooling points.  
 end note  
 :Process nomination;  
 repeat while (More nominations?)  
  
:Finalize nomination;  
  
:Perform settlement process;  
note right  
Reconcile financial and operational data.  
end note  
  
:Print settlement report;  
  
stop  
@enduml

## Workflow explanation

Here is the detailed workflow sequence for the ETRM process, reflecting the flow described in the above diagram.

1. **Create a deal**
   1. The process begins when the trader initiates [creating a deal](../deal_management/create_deal.md).
   2. The system verifies whether all prerequisite configurations are completed.
2. **Check configurations** If configurations are incomplete, the trader must complete them: {% include-markdown “../variable/etrm\_prerequisities.md” %}

* Once configurations are complete, the system allows proceeding to deal type selection.

1. **Select deal type**
   1. Based on the trader’s choice, the system creates either:
      1. [Buy deal:](../deal_management/overview.md) Represents the purchase of natural gas.
      2. [Sell deal:](../deal_management/overview.md) Represents the sale of natural gas.
2. **Create transport contract**
   1. After selecting the deal type, the trader creates a [transport contract.](../getting_started/transport_contract.md)
   2. The contract outlines the terms and conditions for transporting natural gas.
3. **Proceed to nominations** The system moves to the [nominations](../etrm/nominations.md) phase to schedule the movement of natural gas.
4. **Select nomination type**
   1. Traders select from various nomination types:
      1. **Buy nominations**: Requests for purchased natural gas being transported or stored.
      2. **Sell nominations**: Requests for sold natural gas being transported to buyers.
      3. **Interconnects**: Specify gas flow between different pipeline systems or facilities.
      4. **Pool and storage nominations**: Include injection into or withdrawal from storage facilities or pooling points.
5. **Create and finalize nomination**
   1. The system processes the selected nominations, allowing for adjustments if necessary.
   2. Once all required nominations are complete, the system finalizes them.
6. **Perform settlement process** The system reconciles financial and operational data as part of the settlement process. [Learn more.](../etrm/settlements.md)
7. **Print settlement report** The workflow concludes with the trader printing a settlement report for record-keeping and compliance. [Learn more.](../etrm/settlements.md)

## Related topics that you might be interested

* :material-format-paint:{ .lg .middle } **Understanding ETRM**
* Understand the basics of ETRM and what are its key components.
* [:octicons-arrow-right-24: Know more](./index.md)
* :material-format-paint:{ .lg .middle } **How nGenue addresses ETRM aspect**
* Learn how nGenue addresses ETRM aspect.
* [:octicons-arrow-right-24: Know more](./addressing_etrm_aspects.md)