TECH FORUM 3

IDE
DEEP DIVE

ShareDo™

SESSION OVERVIEW

APPETISER

0 Orientation

MAIN COURSE

1 Building custom portal widgets

2 Building custom workflow actions

3 Integrations using the proxy service

4 Integrations – custom portal widgets

5 Integrations – custom blades

6 Integrations – workflow actions

DESSERT

A Time permitting – look ahead to Forms v2

B Wrap up and Q&A

ShareDo™

TECH FORUM ORIENTATION

8/2
Troubleshooting
Stuart McLatchie

15/2
Possibilities
Chris Wilson

22/2
IDE Deep Dive
Tony Johnson

29/2
Beyond the IDE
Steve Robbins

ShareDo™

DEVELOPER TRAINING

USING THE IDE TO BUILD
WIDGETS

(1) WHAT ARE WIDGETS?

ShareDo™

WHAT ARE WIDGETS?

User interface components typically added to portals to display key information.

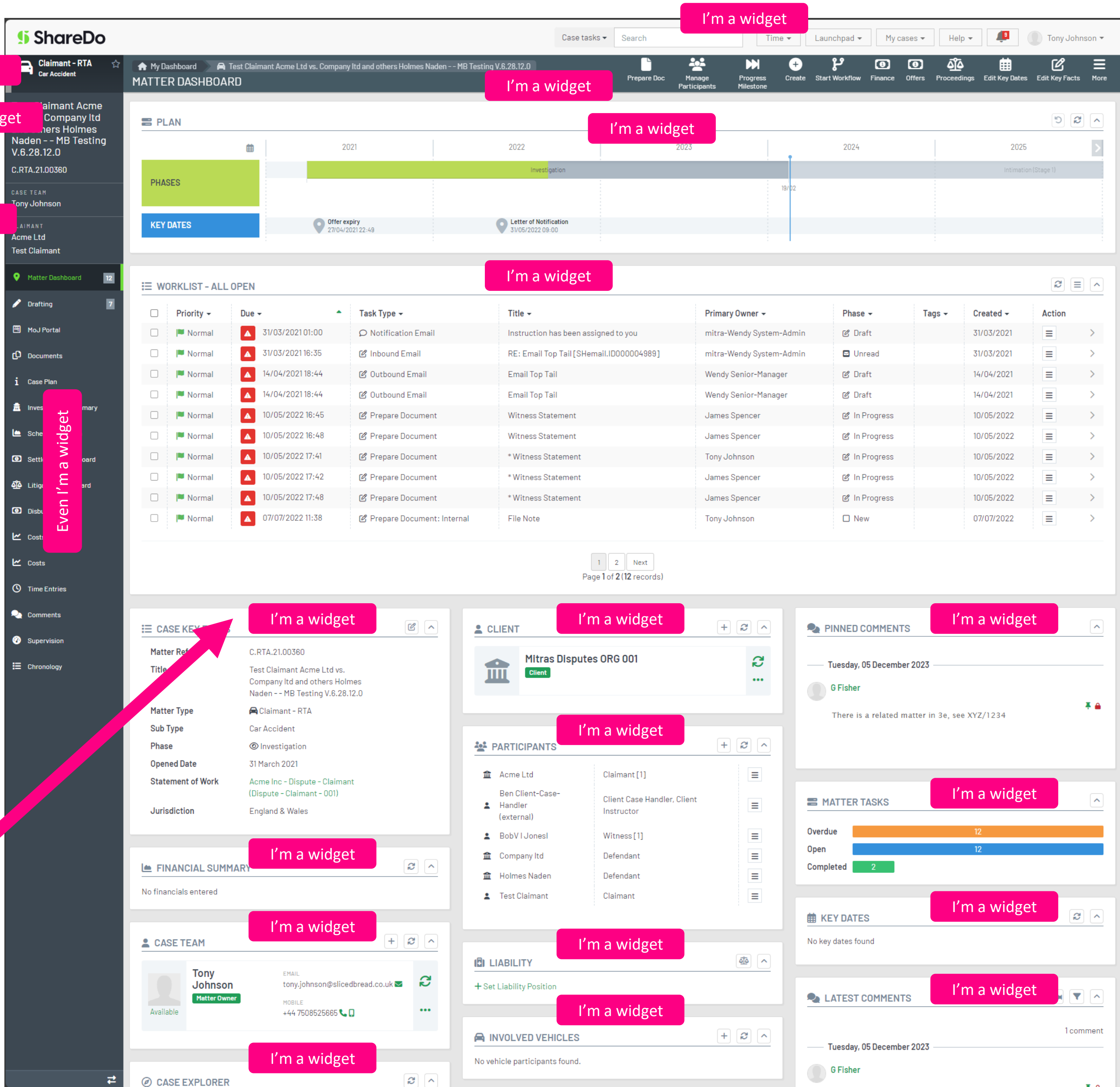
Mini applications – mostly self-contained for reuse and embedding anywhere within the application.

100's included out of the box.

Integrate completely with the portal designer in modeller.

You can build your own.

All of these things are widgets



ShareDo

Case tasks | Search | Time | Launchpad | My cases | Help | Tony Johnson

Claimant - RTA
Car Accident

My Dashboard | Test Claimant Acme Ltd vs. Company ltd and others Holmes Naden - - MB Testing V.6.28.12.0

MATTER DASHBOARD

Prepare Doc | Manage Participants | Progress Milestone | Create | Start Workflow | Finance | Offers | Proceedings | Edit Key Dates | Edit Key Facts | More

Test Claimant Acme Ltd vs. Company ltd and others Holmes Naden - - MB Testing V.6.28.12.0

C.RTA.21.00360

CASE TEAM
Tony Johnson

CLAIMANT
Acme Ltd
Test Claimant

Matter Dashboard 12
Drafting 7
MoJ Portal
Documents
Case Plan
Investigation Summary
Schedule
Settlement Dashboard
Litigation Dashboard
Disbursements
Costs
Costs
Time Entries
Comments
Supervision
Chronology

PLAN

2021 | 2022 | 2023 | 2024 | 2025

PHASES: Investigation; Intimation (Stage 1); 19/02

KEY DATES: Offer expiry 27/04/2021 22:49; Letter of Notification 31/05/2022 09:00

WORKLIST - ALL OPEN

Priority	Due	Task Type	Title	Primary Owner	Phase	Tags	Created	Action
Normal	31/03/2021 01:00	Notification Email	Instruction has been assigned to you	mitra-Wendy System-Admin	Draft		31/03/2021	
Normal	31/03/2021 16:35	Inbound Email	RE: Email Top Tail [SHemail.ID000004989]	mitra-Wendy System-Admin	Unread		31/03/2021	
Normal	14/04/2021 18:44	Outbound Email	Email Top Tail	Wendy Senior-Manager	Draft		14/04/2021	
Normal	14/04/2021 18:44	Outbound Email	Email Top Tail	Wendy Senior-Manager	Draft		14/04/2021	
Normal	10/05/2022 16:45	Prepare Document	Witness Statement	James Spencer	In Progress		10/05/2022	
Normal	10/05/2022 16:48	Prepare Document	Witness Statement	James Spencer	In Progress		10/05/2022	
Normal	10/05/2022 17:41	Prepare Document	* Witness Statement	Tony Johnson	In Progress		10/05/2022	
Normal	10/05/2022 17:42	Prepare Document	* Witness Statement	James Spencer	In Progress		10/05/2022	
Normal	10/05/2022 17:48	Prepare Document	* Witness Statement	James Spencer	In Progress		10/05/2022	
Normal	07/07/2022 11:38	Prepare Document: Internal	File Note	Tony Johnson	New		07/07/2022	

1 2 Next
Page 1 of 2 (12 records)

CASE KEY FACTS

Matter Ref	C.RTA.21.00360
Title	Test Claimant Acme Ltd vs. Company ltd and others Holmes Naden - - MB Testing V.6.28.12.0
Matter Type	Claimant - RTA
Sub Type	Car Accident
Phase	Investigation
Opened Date	31 March 2021
Statement of Work	Acme Inc - Dispute - Claimant (Dispute - Claimant - 001)
Jurisdiction	England & Wales

FINANCIAL SUMMARY
No financials entered

CASE TEAM
Tony Johnson
Matter Owner
Available
EMAIL tony.johnson@slicedbread.co.uk
MOBILE +44 7508525665

CASE EXPLORER

CLIENT
Mitras Disputes ORG 001
Client

PARTICIPANTS

Acme Ltd	Claimant [1]
Ben Client-Case-Handler (external)	Client Case Handler, Client Instructor
BobV I JonesI	Witness [1]
Company ltd	Defendant
Holmes Naden	Defendant
Test Claimant	Claimant

LIABILITY
+ Set Liability Position

INVOLVED VEHICLES
No vehicle participants found.

PINNED COMMENTS
Tuesday, 05 December 2023
G Fisher
There is a related matter in 3e, see XYZ/1234

MATTER TASKS

Overdue	12
Open	12
Completed	2

KEY DATES
No key dates found

LATEST COMMENTS
1 comment
Tuesday, 05 December 2023
G Fisher

DEEP DIVE – WIDGETS

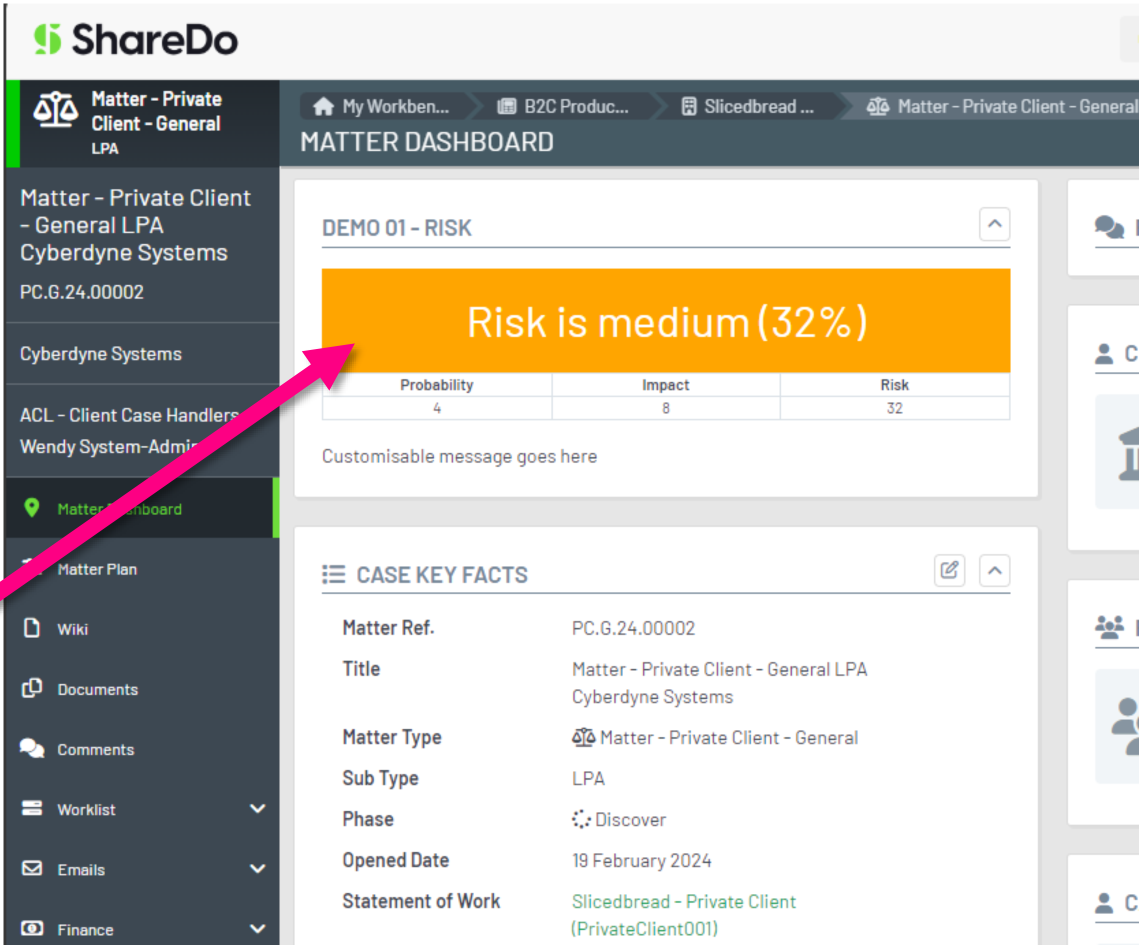
LIVE CODING!
What could possibly go wrong?

DEMO: BUILDING A RISK WIDGET

How?

1. Create a form builder to capture probability and impact.
   a) Create the form builder
   b) Add it to our matter
2. Build a custom widget to visualise this as a RAG status
   a) Scaffold the widget in IDE
   b) Load the data we need
   c) Render it
3. Add it to our portal for a matter type

We're going to build this



ShareDo

Matter - Private Client - General LPA

My Workben... B2C Produc... Slicedbread ... Matter - Private Client - General

MATTER DASHBOARD

Matter - Private Client - General LPA Cyberdyne Systems
PC.G.24.00002

Cyberdyne Systems

ACL - Client Case Handlers
Wendy System-Admi

Matter Dashboard
Matter Plan
Wiki
Documents
Comments
Worklist
Emails
Finance

DEMO 01 - RISK

Risk is medium (32%)

Probability	Impact	Risk
4	8	32

Customisable message goes here

CASE KEY FACTS

Matter Ref.	PC.G.24.00002
Title	Matter - Private Client - General LPA Cyberdyne Systems
Matter Type	Matter - Private Client - General
Sub Type	LPA
Phase	Discover
Opened Date	19 February 2024
Statement of Work	Slicedbread - Private Client (PrivateClient001)

DEVELOPER TRAINING

USING THE IDE TO BUILD
WORKFLOW ACTIONS

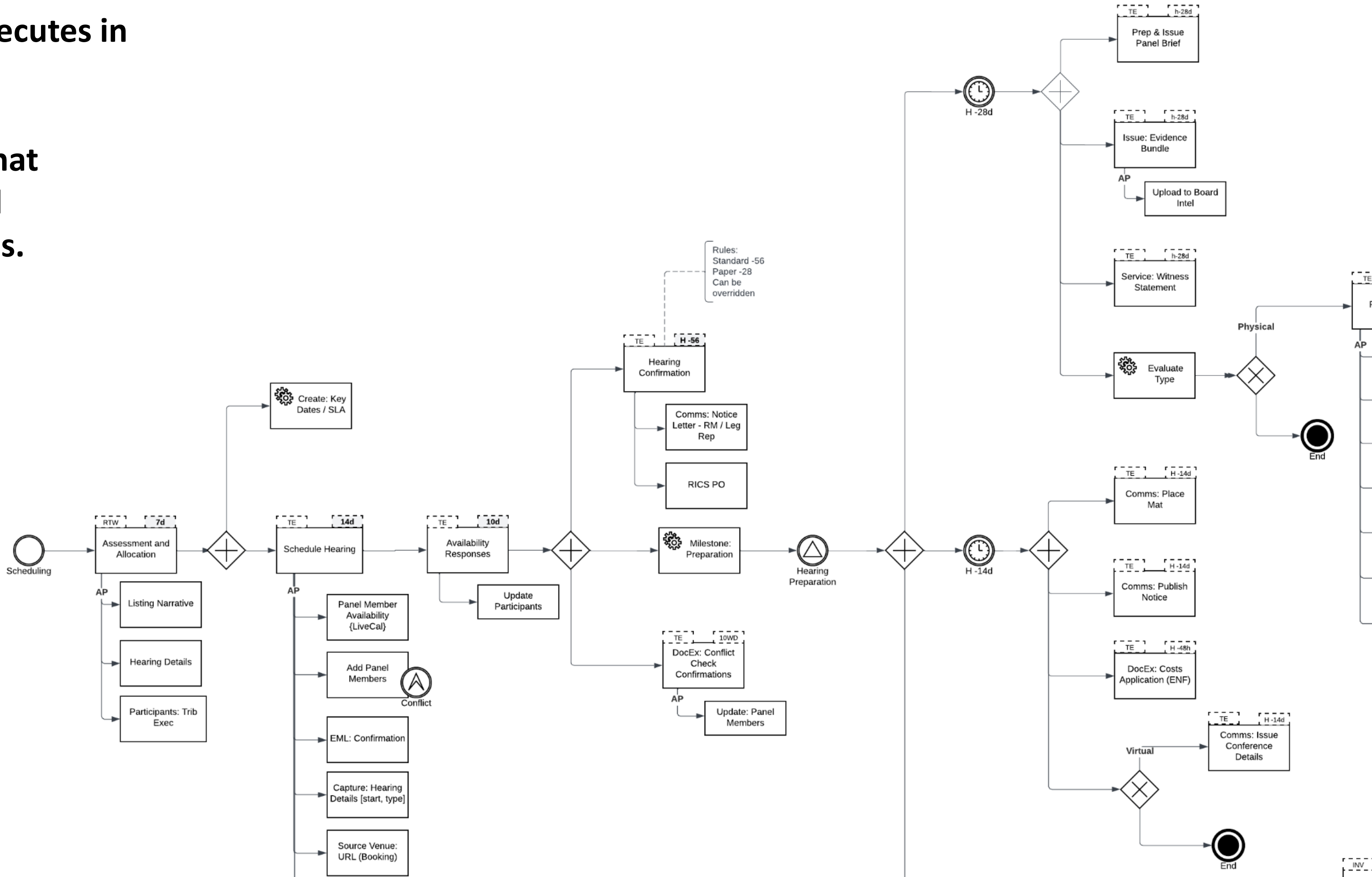
(2A) WHAT IS WORKFLOW?

ShareDo™

WHAT IS WORKFLOW?

A business process that executes in response to some action.

A no-code design canvas that visualises that process and translates to code that runs.



WHAT IS WORKFLOW?

A business process that executes in response to some action.

A no-code design canvas that visualises that process and translates to code that runs.

VARIABLES
Typed values that can change. Can be either local to the process or parameters to it – i.e. input variables. (In code: variable)

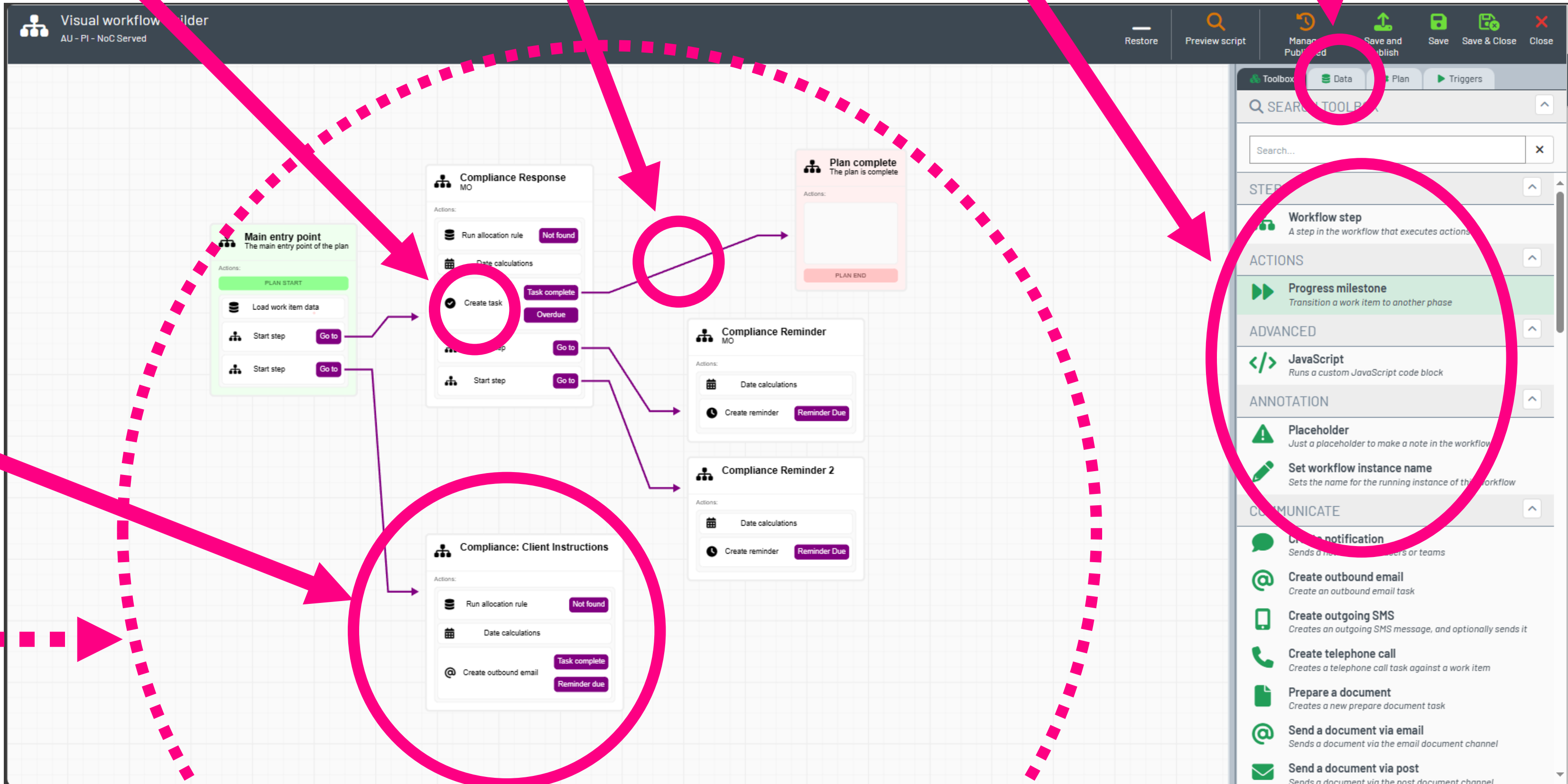
ACTION
One specific operation to be executed. (In code: a function call)

OUTLET
A mechanism to branch direction within the logic. Always asynchronous – process "sleeps" as it transitions across the lines. (In code: an "if" or "goto").

ACTION TOOLBOX
The actions that can be added to the design canvas to carry out functions within your process.

STEP
Describes logic to execute in one operation. (In code: a procedure)

PROCESS/DESIGN CANVAS
The visual workflow design that describes the process being modelled as a whole, or in part. (In code: a program)



DEVELOPER TRAINING

USING THE IDE TO BUILD
WORKFLOW ACTIONS

(2B) HOW DO WORKFLOWS RUN?

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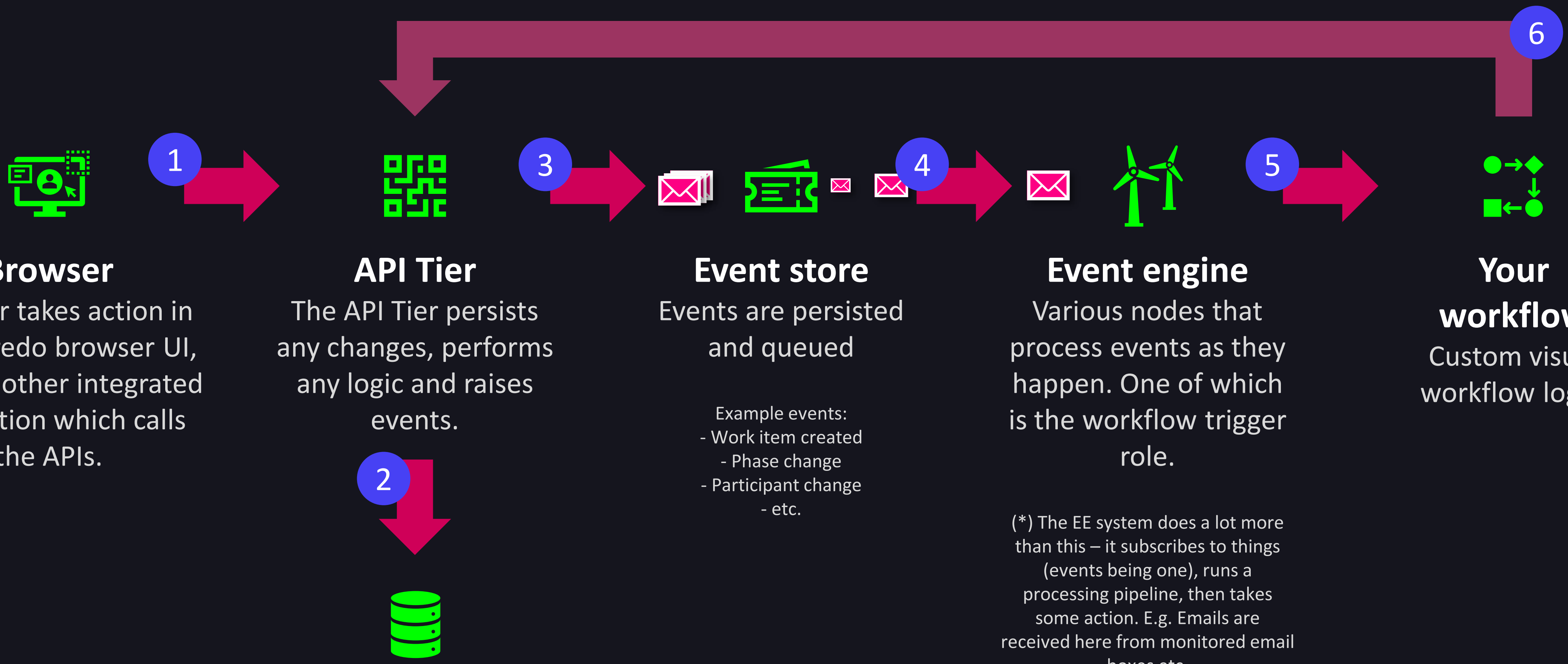
EVENT**STREAMING**



Browser
The user takes action in the sharedo browser UI, or some other integrated application which calls the APIs.

API Tier
The API Tier persists any changes, performs any logic and raises events.

Database
Changes persisted to the single source of truth

Event store
Events are persisted and queued

Example events:
- Work item created
- Phase change
- Participant change
- etc.

Event engine
Various nodes that process events as they happen. One of which is the workflow trigger role.

(*) The EE system does a lot more than this – it subscribes to things (events being one), runs a processing pipeline, then takes some action. E.g. Emails are received here from monitored email boxes etc.

Your workflow
Custom visual workflow logic.

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DEEP DIVE – **WORKFLOW**

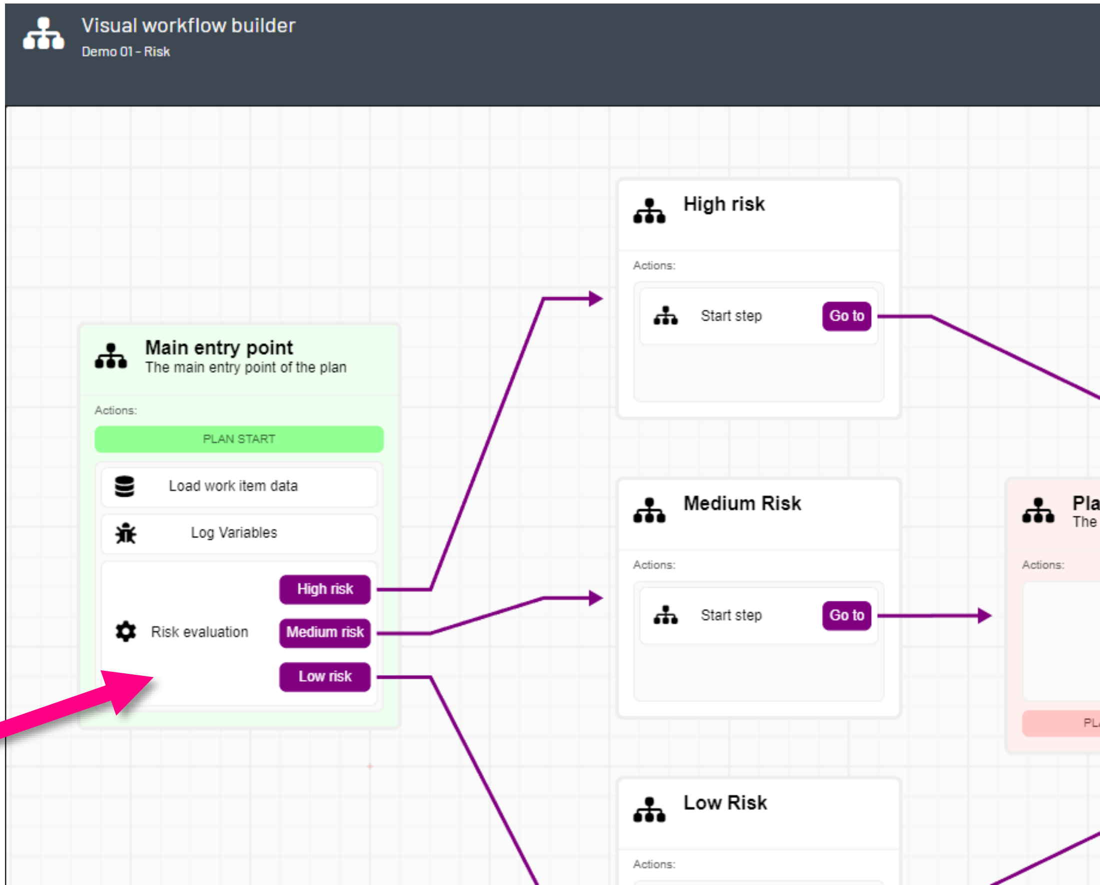
LIVE CODING!
What could possibly go wrong?

DEMO: BUILDING A RISK ACTION

How?

1. Build a custom workflow step to evaluate risk and take action
   1. Scaffold the action in IDE
   2. Input parameters for matter id
   3. Load the data, calculate risk
   4. Outlets for high, medium, low risk
2. Add it to a workflow to trigger supervision on high-risk matters.

We're going to build this



DEVELOPER TRAINING

USING LINKED SERVICES AND THE PROXY FOR
INTEGRATIONS

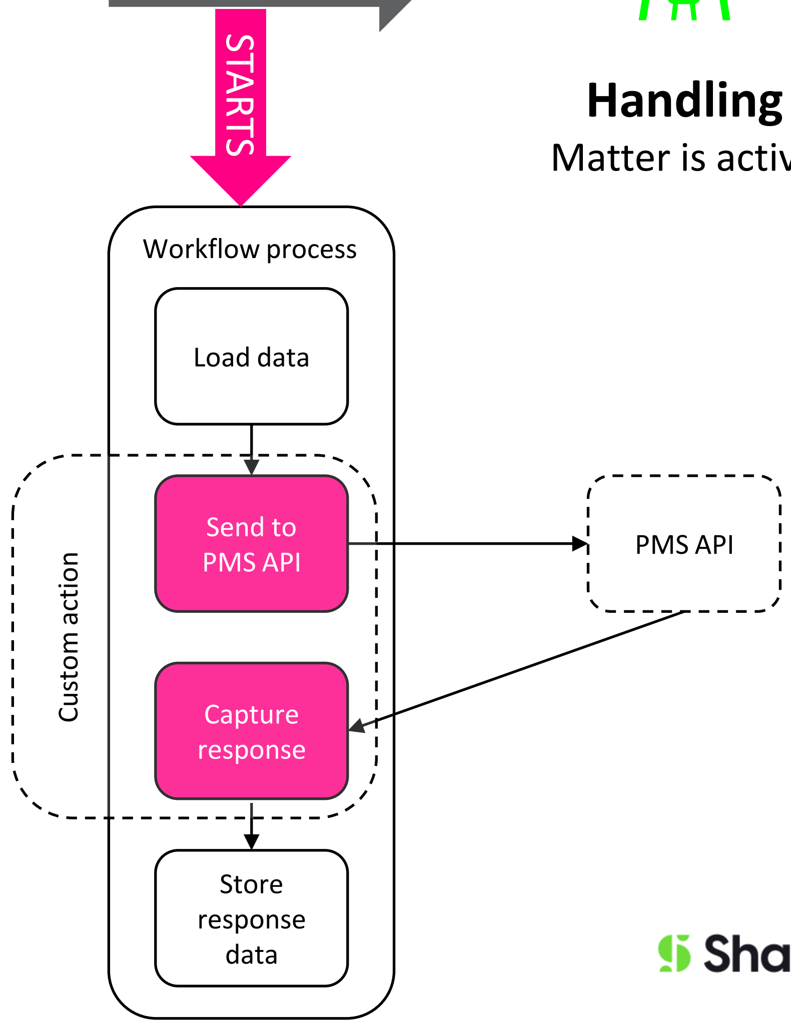
(3A) A TYPICAL INTEGRATION SCENARIO

DEEP DIVE – INTEGRATION SCENARIO

Matter Incepted
The matter is created

Discovery
Relevant data added

Handling
Matter is active



Matter Inception PMS Integration

- When we have created a matter and reached a certain phase in its life, we will:
  - Call our PMS API to setup the matter there.
  - Passing some data we've captured
  - Getting back a result value and storing it against the matter.

ShareDo

DEEP DIVE – SAMPLE API

Running a fake API representing a PMS system.

Secured with a simple shared secret/API KEY.

Integrations include;

Notify the PMS about a matter created in ShareDo and obtain a PMS matter reference.

Get the current financial balance for a matter reference.

Update the financial balance by an amount.

Get an audit log of the balance changes over time.

Ingest a matter to PMS

HTTP POST /api/matter

INPUT

```
{
  priority: int,
  confidential: bool,
  billingArrangements: string
}
```

OUTPUT

```
{
  pmsReference: string
}
```

Get PMS balance for a matter

HTTP GET /api/matter/{ref}/financials

INPUT

```
N/A
```

OUTPUT

```
{
  balance: decimal
}
```

Adjust balance for a matter

HTTP POST /api/matter/{ref}/financials

INPUT

```
{
  delta: decimal
}
```

OUTPUT

```
{
  balance: decimal
}
```

Get audit

HTTP GET /api/matter/{ref}/financials/audit

INPUT

```
N/A
```

OUTPUT

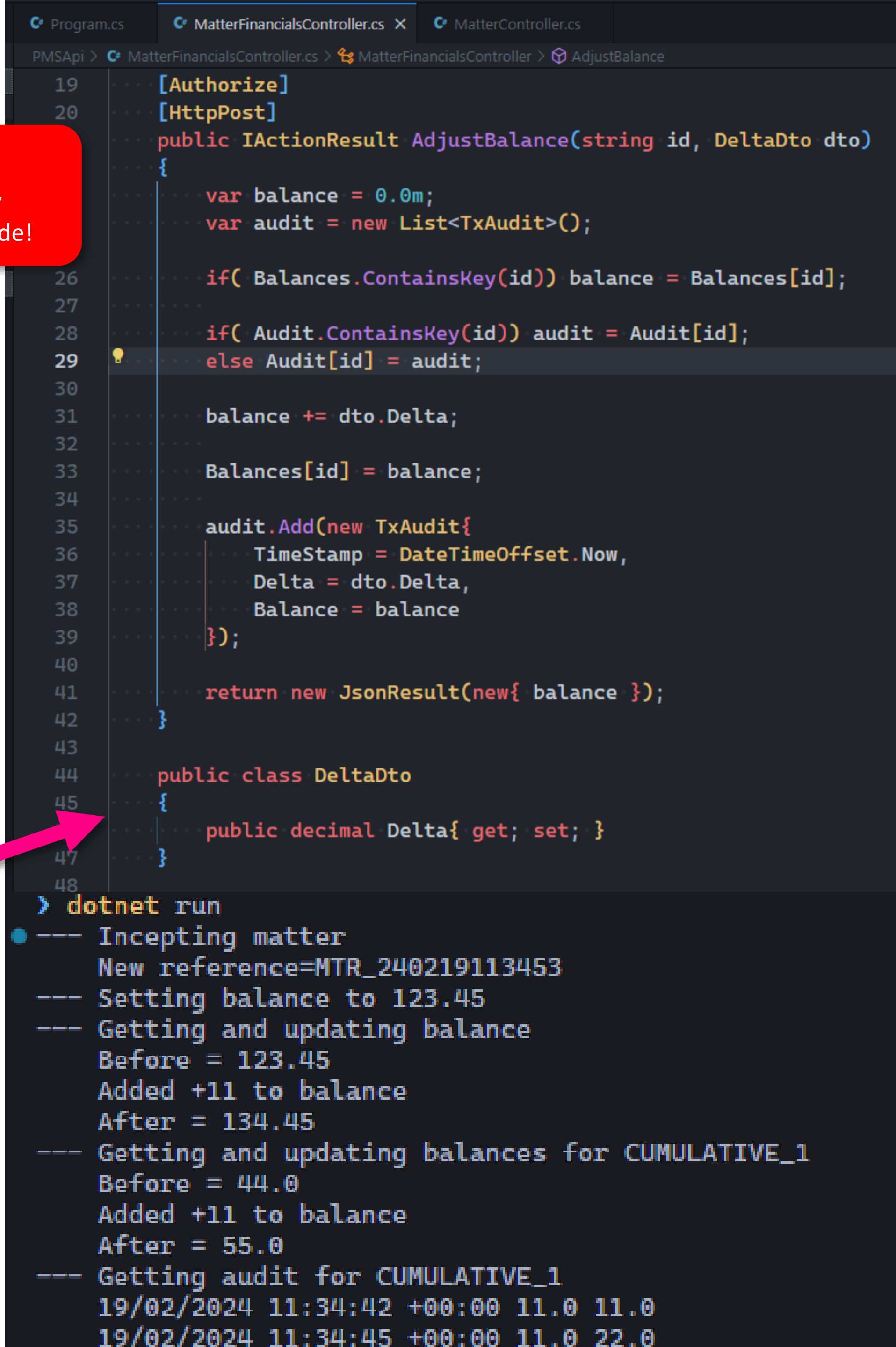
```
[
  {
    timestamp: date/Time,
    delta: decimal,
    balance: decimal
  }
]
```

DEEP DIVE – SAMPLE API

EXPLORE: THE SAMPLE API

SAMPLE!
Not even remotely production quality code!

We're going to use this


Program.cs
MatterFinancialsController.cs
MatterController.cs
PMSApi > MatterFinancialsController.cs > MatterFinancialsController > AdjustBalance

```csharp
    [Authorize]
    [HttpPost]
    public IActionResult AdjustBalance(string id, DeltaDto dto)
    {
        var balance = 0.0m;
        var audit = new List<TxAudit>();

        if( Balances.ContainsKey(id)) balance = Balances[id];

        if( Audit.ContainsKey(id)) audit = Audit[id];
        else Audit[id] = audit;

        balance += dto.Delta;

        Balances[id] = balance;

        audit.Add(new TxAudit{
            TimeStamp = DateTimeOffset.Now,
            Delta = dto.Delta,
            Balance = balance
        });

        return new JsonResult(new{ balance });
    }

    public class DeltaDto
    {
        public decimal Delta{ get; set; }
    }
```

```
❯ dotnet run
--- Incepting matter
    New reference=MTR_240219113453
--- Setting balance to 123.45
--- Getting and updating balance
    Before = 123.45
    Added +11 to balance
    After = 134.45
--- Getting and updating balances for CUMULATIVE_1
    Before = 44.0
    Added +11 to balance
    After = 55.0
--- Getting audit for CUMULATIVE_1
    19/02/2024 11:34:42 +00:00 11.0 11.0
    19/02/2024 11:34:45 +00:00 11.0 22.0
```

DEVELOPER TRAINING

USING LINKED SERVICES AND THE PROXY FOR
INTEGRATIONS

(3B) INTRO TO LINKED SERVICES AND THE PROXY.

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NAÏVE**INTEGRATION**

You COULD do this

Your workflow action

Custom visual workflow logic.

```
let headers = { “API_KEY”: “123456” };

let response = http.post          1   2
(
   “https://myservice.co/api”, {},
   headers
);                  1
```

External API

HTTP/REST API to be called.

BUT....

1 **Not portable**

- URL and API KEY will change between environments (UAT/Test/Production)

2 **Leaky security**

- API key in code in the IDE!

- **Impossible for user impersonation flows**
  - Can’t link the service for individual users.

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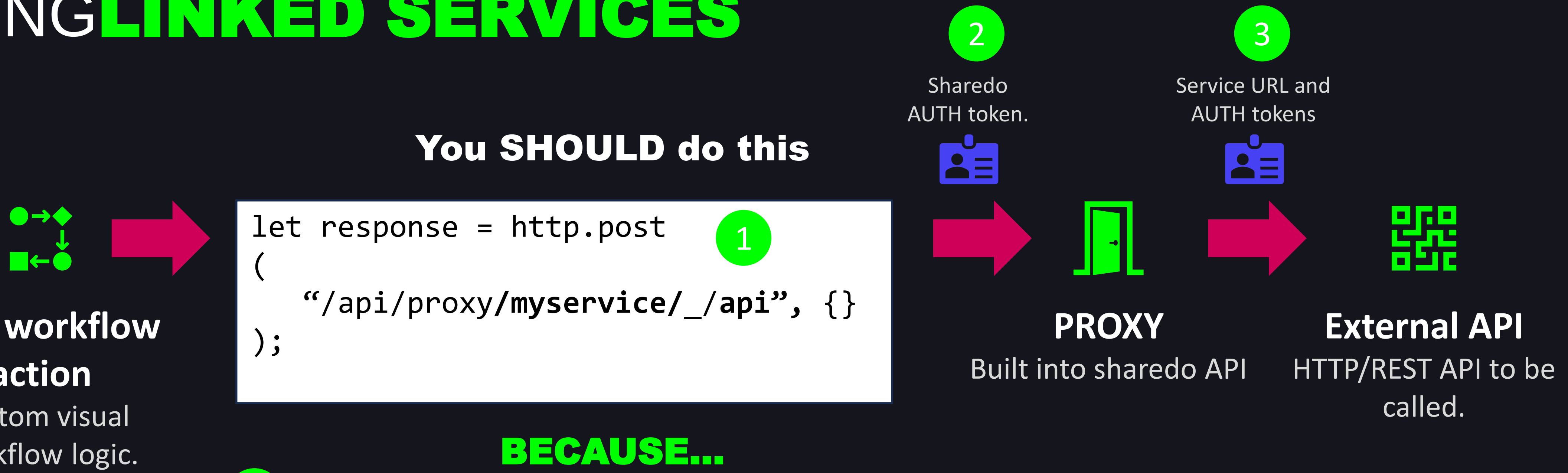
USING LINKED SERVICES

You SHOULD do this


Your workflow action
Custom visual workflow logic.
1
2
Sharedo AUTH token.
3
Service URL and AUTH tokens
PROXY
Built into sharedo API
External API
HTTP/REST API to be called.

```
let response = http.post
(
   “/api/proxy/myservice/_/api”, {}
);
```

BECAUSE…

1 **Calling code abstracted from service specifics**

- Code calls a named service via the linked service proxy
- No security information, no knowledge of upstream URL etc.

2 **Secured call to standard sharedo API**

- Calling sharedo API as though the upstream API is part of it
- So secured as such via http client as normal
- Audited, logged, traced as any other sharedo API call

3 **The proxy injects the configuration and upstream security**

- Proxies to the target URL configured against the named service
- Injects appropriate security information automatically.
- Using any OAuth flow, API KEY etc.
- No hard coded security information to leak.

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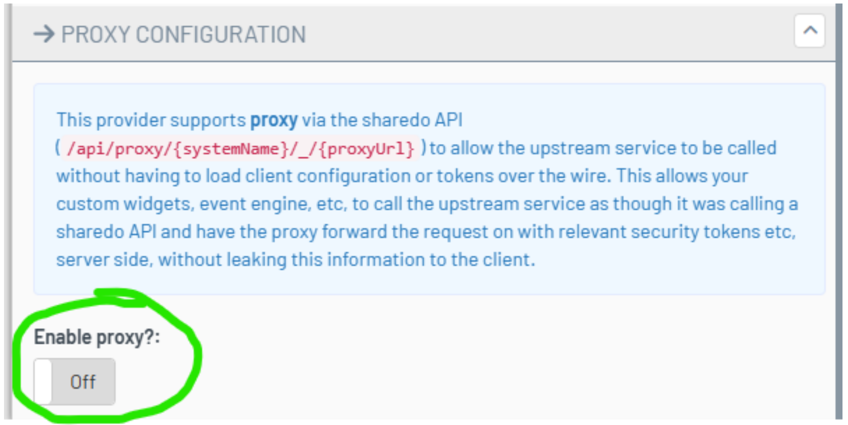
DEEP DIVE – LINKED SERVICES

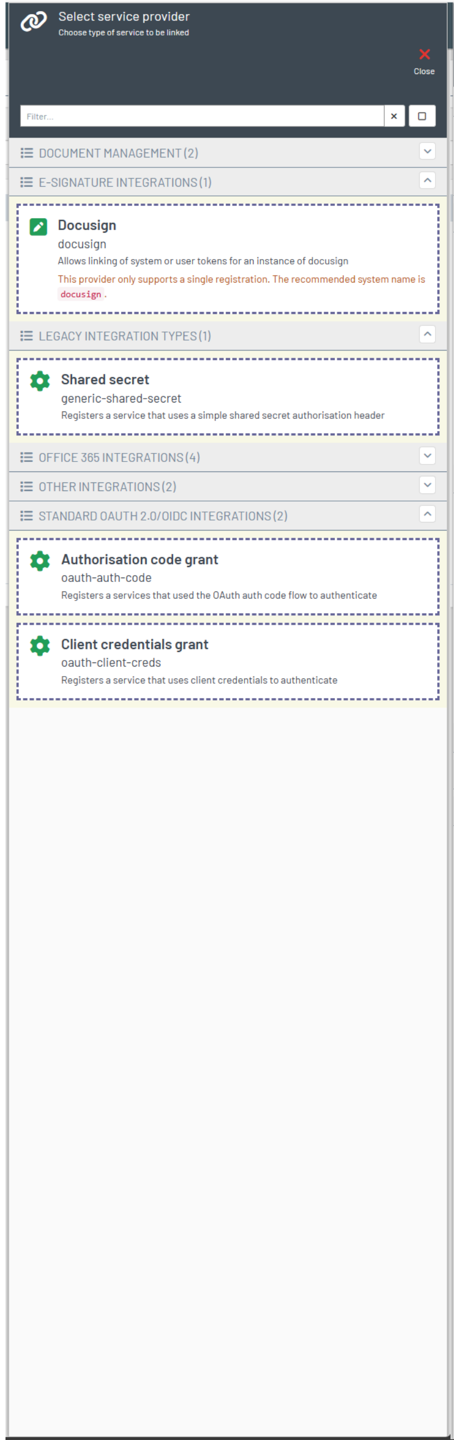
- **Services are registered in admin**
  - Admin > Integrations > Manage linked services
- **Registered with a service type/provider**
  - Many specifics for common integrations
  - Generic ones for most custom integrations
    - Shared secret / API KEY
    - OAuth 2.0 - Authorisation code grant
    - OAuth 2.0 – Client credentials grant
- **PROXY is OPT IN!**
  - Important this is ON



PROXY CONFIGURATION

This provider supports **proxy** via the sharedo API (`/api/proxy/{systemName}/_/{proxyUrl}`) to allow the upstream service to be called without having to load client configuration or tokens over the wire. This allows your custom widgets, event engine, etc, to call the upstream service as though it was calling a sharedo API and have the proxy forward the request on with relevant security tokens etc, server side, without leaking this information to the client.

Enable proxy?: Off



Select service provider
Choose type of service to be linked

DOCUMENT MANAGEMENT (2)

E-SIGNATURE INTEGRATIONS (1)

Docusign
docusign
Allows linking of system or user tokens for an instance of docusign
This provider only supports a single registration. The recommended system name is `docusign`.

LEGACY INTEGRATION TYPES (1)

Shared secret
generic-shared-secret
Registers a service that uses a simple shared secret authorisation header

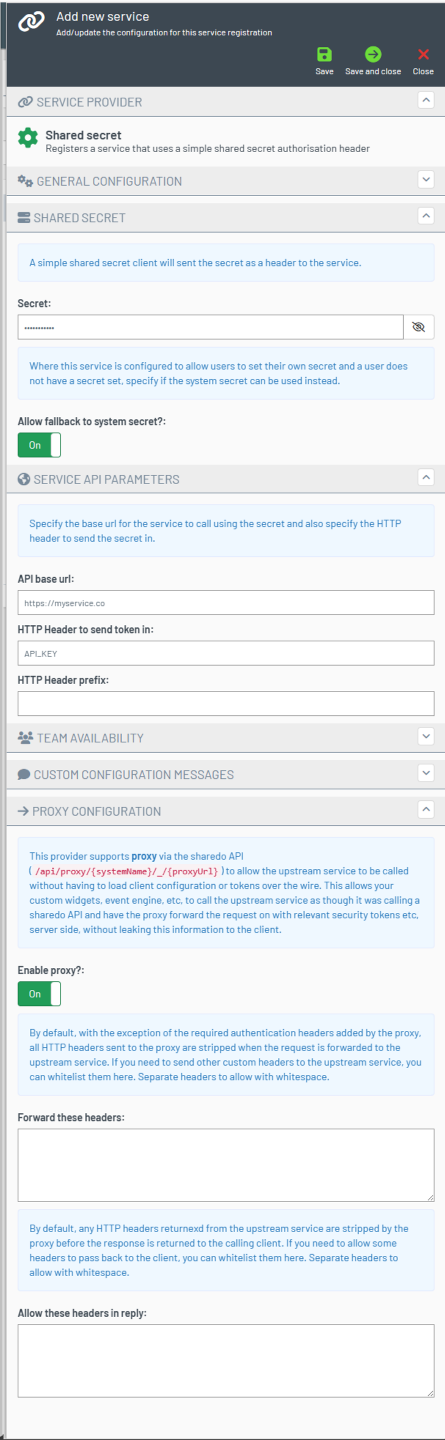
OFFICE 365 INTEGRATIONS (4)

OTHER INTEGRATIONS (2)

STANDARD OAUTH 2.0/OIDC INTEGRATIONS (2)

Authorisation code grant
oauth-auth-code
Registers a services that used the OAuth auth code flow to authenticate

Client credentials grant
oauth-client-creds
Registers a service that uses client credentials to authenticate



Add new service
Add/update the configuration for this service registration

SERVICE PROVIDER

Shared secret
Registers a service that uses a simple shared secret authorisation header

GENERAL CONFIGURATION

SHARED SECRET

A simple shared secret client will sent the secret as a header to the service.

Secret: ••••••••••••

Where this service is configured to allow users to set their own secret and a user does not have a secret set, specify if the system secret can be used instead.

Allow fallback to system secret?: On

SERVICE API PARAMETERS

Specify the base url for the service to call using the secret and also specify the HTTP header to send the secret in.

API base url: https://myservice.co

HTTP Header to send token in: API_KEY

HTTP Header prefix:

TEAM AVAILABILITY

CUSTOM CONFIGURATION MESSAGES

PROXY CONFIGURATION

This provider supports **proxy** via the sharedo API (`/api/proxy/{systemName}/_/{proxyUrl}`) to allow the upstream service to be called without having to load client configuration or tokens over the wire. This allows your custom widgets, event engine, etc, to call the upstream service as though it was calling a sharedo API and have the proxy forward the request on with relevant security tokens etc, server side, without leaking this information to the client.

Enable proxy?: On

By default, with the exception of the required authentication headers added by the proxy, all HTTP headers sent to the proxy are stripped when the request is forwarded to the upstream service. If you need to send other custom headers to the upstream service, you can whitelist them here. Separate headers to allow with whitespace.

Forward these headers:

By default, any HTTP headers returnexd from the upstream service are stripped by the proxy before the response is returned to the calling client. If you need to allow some headers to pass back to the client, you can whitelist them here. Separate headers to allow with whitespace.

Allow these headers in reply:

DEVELOPER TRAINING

USING THE IDE TO BUILD
INTEGRATIONS

(4) USING THE PROXY FROM A WIDGET

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DEEP DIVE – WIDGETS

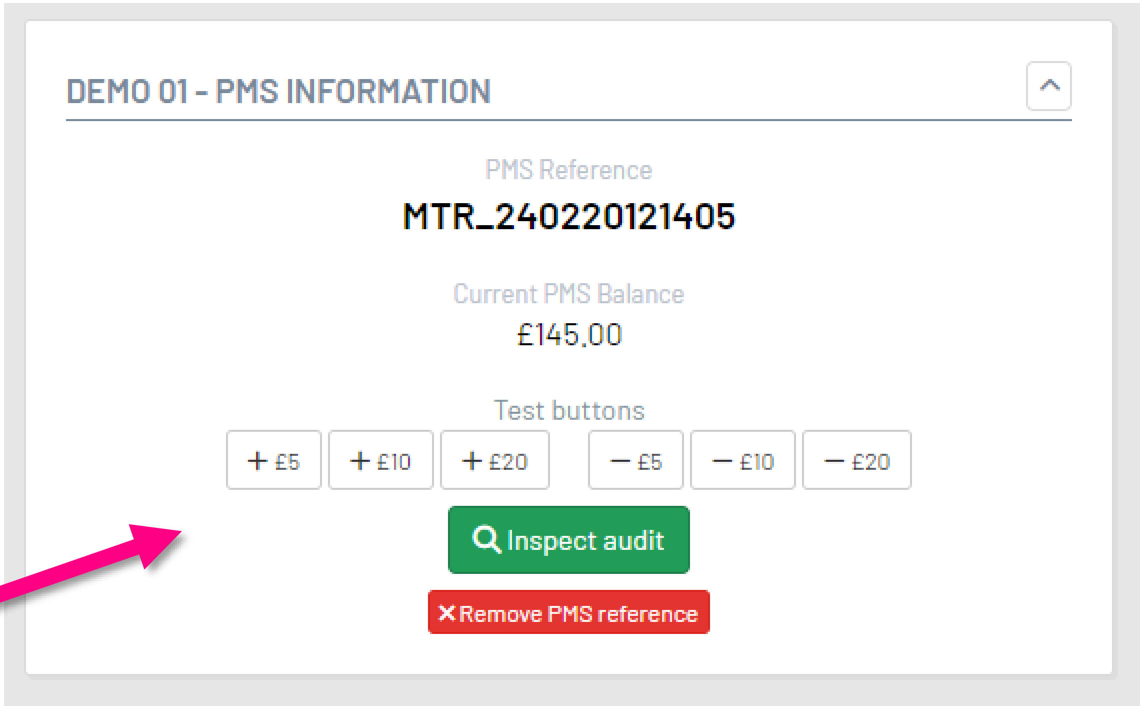
LIVE CODING!
What could possibly go wrong?

DEMO: CREATING A PMS WIDGET

How?

1. Create a form builder to store PMS reference
   a) Create the form builder
   b) Add it to our matter
2. Build widget to show PMS reference and any balances
   a) Scaffold the widget in IDE
   b) Load the data we need from the API, using proxy
   c) Render it
3. Add it to our portal for a matter type
4. Extend it to add budget adjustments +/- £5, £10, £20
   a) Call the API using proxy
5. Extend it with a button to "view audit"… next demo!

We're going to build this



DEMO 01 - PMS INFORMATION

PMS Reference
MTR_240220121405

Current PMS Balance
£145.00

Test buttons

DEVELOPER TRAINING

USING THE IDE TO BUILD
CUSTOM BLADES

(5) WHAT IS A BLADE?

ShareDo™

WHAT IS A BLADE?

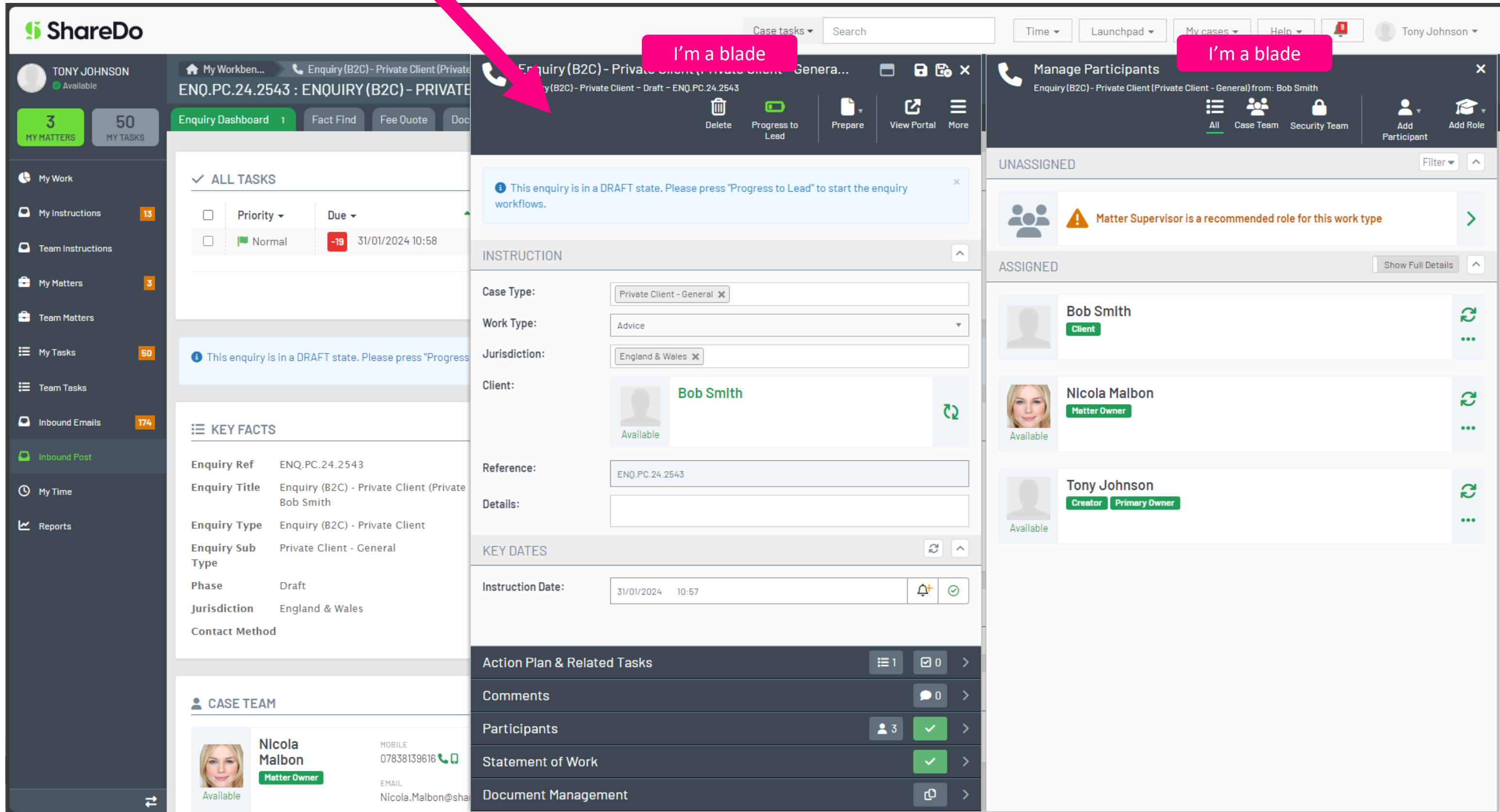
User interface components that “fly in” from the right to carry out a specific action.

Usually used for data capture, manipulation, or to show more detail beyond that which is contained in a widget.

Blades can chain together to allow exploration of data without losing original context.

You can build your own.

These are blades.


I’m a blade

I’m a blade

ShareDo

TONY JOHNSON
Available

3 MY MATTERS | 50 MY TASKS

- My Work
- My Instructions 13
- Team Instructions
- My Matters 3
- Team Matters
- My Tasks 50
- Team Tasks
- Inbound Emails 174
- Inbound Post
- My Time
- Reports

ENQ.PC.24.2543 : ENQUIRY (B2C) - PRIVATE

Enquiry Dashboard 1 | Fact Find | Fee Quote | Doc

ALL TASKS

Priority	Due
Normal	-19 31/01/2024 10:58

This enquiry is in a DRAFT state. Please press "Progress

KEY FACTS

Enquiry Ref	ENQ.PC.24.2543
Enquiry Title	Enquiry (B2C) - Private Client (Private Bob Smith
Enquiry Type	Enquiry (B2C) - Private Client
Enquiry Sub Type	Private Client - General
Phase	Draft
Jurisdiction	England & Wales
Contact Method	

CASE TEAM

Nicola Malbon — Matter Owner — Available
MOBILE 07838139616
EMAIL Nicola.Malbon@sha

Enquiry (B2C) - Private Client (Private Client - Genera...
Enquiry (B2C) - Private Client - Draft - ENQ.PC.24.2543

Delete | Progress to Lead | Prepare | View Portal | More

This enquiry is in a DRAFT state. Please press "Progress to Lead" to start the enquiry workflows.

INSTRUCTION

Case Type:	Private Client - General
Work Type:	Advice
Jurisdiction:	England & Wales
Client:	Bob Smith (Available)
Reference:	ENQ.PC.24.2543
Details:	

KEY DATES

Instruction Date:	31/01/2024 10:57

- Action Plan & Related Tasks 1 0
- Comments 0
- Participants 3
- Statement of Work
- Document Management

Manage Participants
Enquiry (B2C) - Private Client (Private Client - General) from: Bob Smith

All | Case Team | Security Team | Add Participant | Add Role

UNASSIGNED

Matter Supervisor is a recommended role for this work type

ASSIGNED

- Bob Smith — Client
- Nicola Malbon — Matter Owner — Available
- Tony Johnson — Creator, Primary Owner — Available

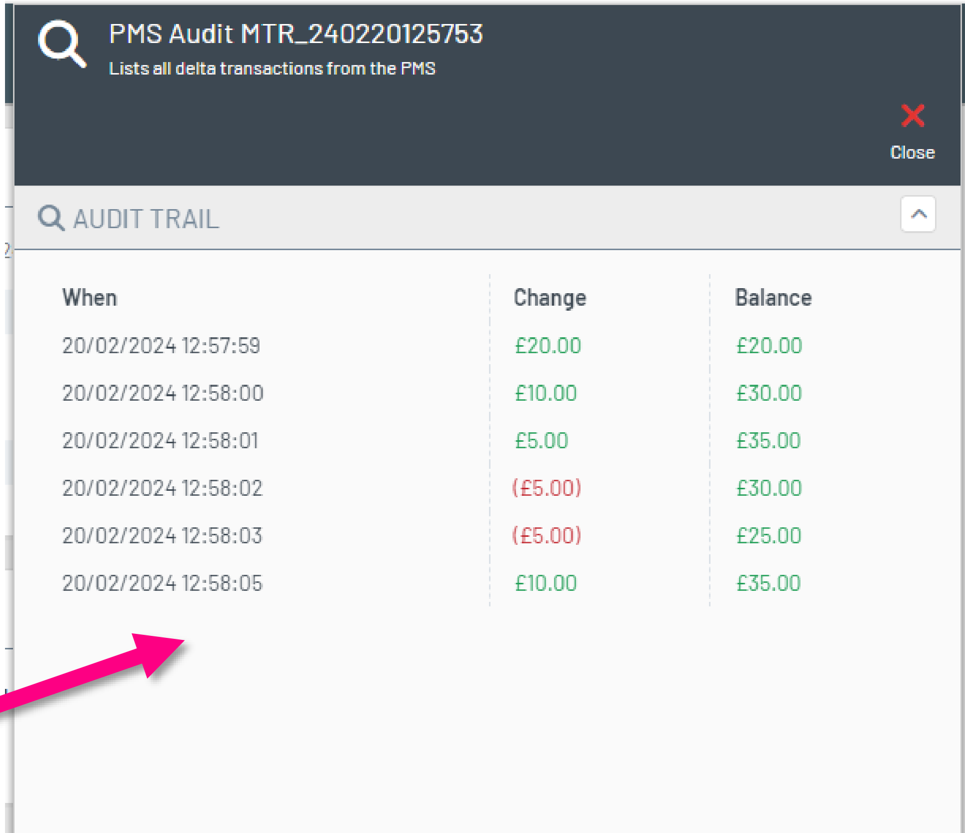
DEEP DIVE – BLADES

LIVE CODING!
What could possibly go wrong?

DEMO: CREATING AN AUDIT DETAIL BLADE

How?

1. Build blade to show audit information from the PMS
   a) Scaffold the blade in IDE
   b) Load the data we need from the API, using proxy
   c) Render it
2. Go back and hook the blade up to our custom PMS widget



PMS Audit MTR_240220125753

Lists all delta transactions from the PMS

When	Change	Balance
20/02/2024 12:57:59	£20.00	£20.00
20/02/2024 12:58:00	£10.00	£30.00
20/02/2024 12:58:01	£5.00	£35.00
20/02/2024 12:58:02	(£5.00)	£30.00
20/02/2024 12:58:03	(£5.00)	£25.00
20/02/2024 12:58:05	£10.00	£35.00

We're going to build this

DEVELOPER TRAINING

USING THE IDE TO BUILD
INTEGRATIONS

(6) USING THE PROXY FROM A WORKFLOW ACTION

ShareDo™

DEEP DIVE – WORKFLOW

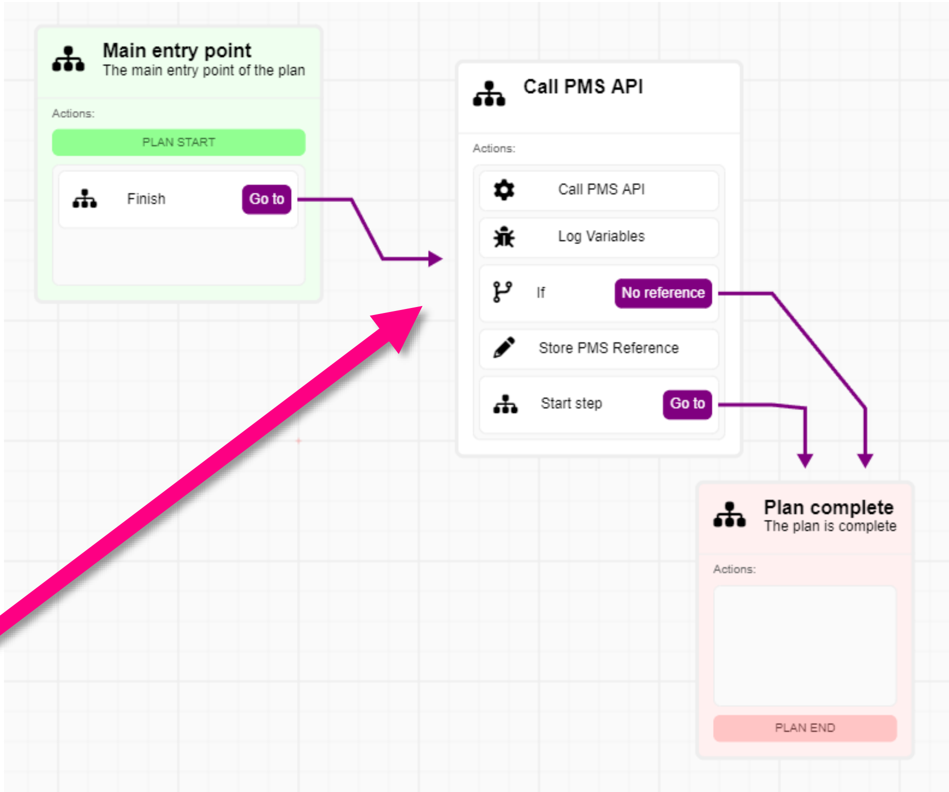
LIVE CODING!
What could possibly go wrong?

DEMO: CUSTOM WF ACTIONS - PMS

How?

1. Custom action to onboard a matter to the PMS via API
   a) Scaffold the action in IDE
   b) Add the proxy call to the API endpoint
2. Add it to a menu to trigger it
3. Add it to an event to trigger it on phase change

4. Time permitting – create another to adjust budgets by +£N each time we complete a task within a matter.



We're going to build this

DEVELOPER TRAINING

IDE

DEEP DIVE

(A) FORMS 2 LOOK AHEAD?

(If we have time)

ShareDo™

DEVELOPER TRAINING

IDE

DEEP DIVE

(B) WRAPPING UP

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WHAT DID WE COVER?

1 Building custom portal widgets

2 Building custom workflow actions

3 Integrations using the proxy service

4 Integrations – custom portal widgets

5 Integrations – custom blades

6 Integrations – workflow actions

✓ Tell them what you're going to tell them → ✓ Tell them → ✓ Tell them what you told them

ShareDo

TECH FORUM RE-ORIENTATION

8/2
Troubleshooting
Stuart McLatchie

15/2
Possibilities
Chris Wilson

22/2
IDE Deep Dive
Tony Johnson

29/2
Beyond the IDE
Steve Robbins

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DEVELOPER TRAINING

IDE
DEEP DIVE

Q&A

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