Citizen Engagement (CE) Enhancements

Cúram 8.1.2 (CE v7.0.0) Enablement Material

Hello and welcome to this deep dive presentation that introduces the enhancements to Curam Citizen Engagement that are available in CE v7.0.0 and compatible with Merative Curam (SPM) 8.1.2.0. Note that Citizen Engagement v7.0.0 incorporates Cúram Universal Access Responsive Web Application v7.0.0 and Cúram Web Design System v7.0.0.

Agenda

1. Framework for building external applications

2. IEG Script guidance & patterns

3. React 18 Upgrade & move to Vite

In CE v7.0.0 there are 3 enhancements

First there is the enhancement to the framework for building external web applications which has been extended to support the creation of web applications for any type of user, not just citizens.

Then we have IEG Script guidance which provides best-practice guidelines to build the best user experience with IEG forms.

Lastly we have upgraded to React 18 and replaced the project build and bundling tool React- Scripts with Vite.

# Framework for building external applications

Framework for building external applications

Before CE v7.0.0

Cúram Citizen Engagement (CE) was used to build online web applications for citizens to apply for benefits for themselves and to view and make changes to their own details only.

This has proved challenging for some citizens who are unable to work with online technology.

There was no easy way of building custom web applications for other users such as those who assist others in applying for benefit.
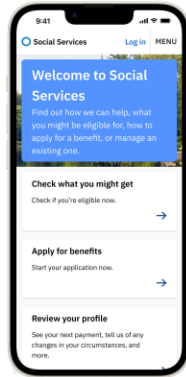
In CE v7.0.0

The CE infrastructure has been extended to provide support for **authorized representatives** (those who assist others in applying for benefits).

The Cúram Design System can now be used to build web applications for **any** user.

Cúram Citizen Engagement (CE) provides a citizen-facing responsive web application which is a ready-to-deploy reference application. It enables agencies to offer a web self-service solution to their citizens to apply for benefits and track & manage their interactions with the agency. Before Cúram Universal Access Responsive Web Application v7.0.0 (Cúram v8.1.2) only citizens could view and make changes to their account, and only once they had been authenticated with the Curam system.

For some citizens, working with online technology can be challenging for many reasons. They may not have the cognitive or physical abilities or the skills to work with technology or read and complete forms. Or they may not have a device that they can use to access the service in the first place.
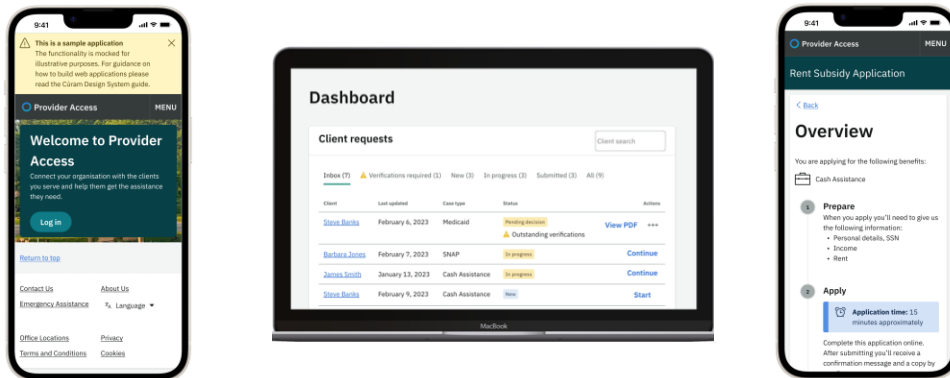
Authorized representatives help vulnerable citizens to get the support they need by assisting them in applying for benefits. Authorized representatives may be family members, legal representatives, carers, community-based organizations, or other approved third parties. Before v7.0.0, these types of users were not catered for within CE, and the infrastructure prevented System Integrators from building out their own online web applications for these users.

In CE v7.0.0, the CE infrastructure has been extended to support authorized representatives.
In addition, the Cúram Design System now supports authentication of external users of any type & so can be used to build web applications for other types of users as needed.

Support for Authorized Representatives

Enhancements to the CE development environment and the Cúram Web APIs now enable customers to build web applications for authorized representatives that support applying for benefits and managing associated tasks on behalf of citizens.

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Enhancements to the CE development environment and the Cúram Web APIs now enable customers to build web applications for authorized representatives that support applying for benefits and managing associated tasks on behalf of citizens.

Key authorized representative business processes are provided including the ability to upload verification documents on behalf of someone else.

A sample authorized representative app is also provided, which presents some ideas for how this type of web application might look and behave.
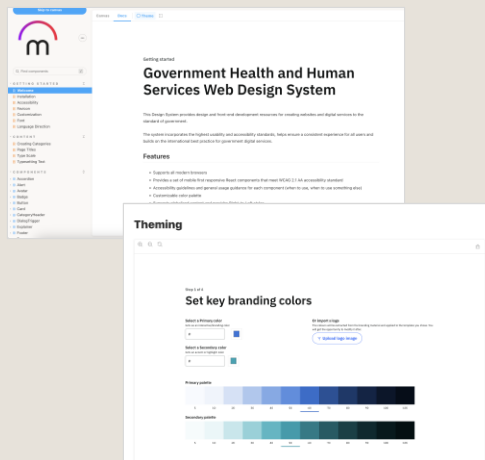Please note, *This is not a reference application, and while some screens are provided as part of the sample, the data presented is mocked, not retrieved by REST APIs.*

Support for all external users

The Design System now supports authentication for external users of **any type** and so can be used to build solutions for non-benefit related scenarios.
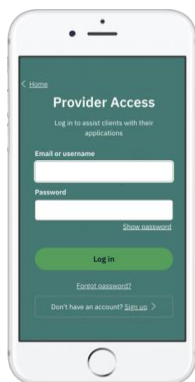
UI Theming is also supported allowing new web applications to match to existing agency themes or have distinct themes if needed.

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In addition to specific support for authorized representatives, In CE v7.0.0, the Cúram Design System now supports authentication of external users of any type, not just citizens seeking benefit or those who are helping citizens apply for benefits.

As the design system comes with significant support for calling Cúram Web APIs, this means you can quickly build solutions for **any** users that depend on data and business operations in the Cúram application. So it can also be used to build solutions for non-benefit related use cases, a web application for a mandated reporter for example.

The Web Design System also supports theming of applications, allowing you to intuitively customize the Cúram Design System color scheme to match existing agency themes or to have distinct themes without the risk of affecting the accessibility of the product.

In summary, Cúram Universal Access Responsive Web Application 7.0 (Cúram V8.1.2) provides

- Support for logging in to a web application as any type of user (and includes authentication, security and access control).

- This also includes utilizing the Design System to build out web applications for any type of user

For authorized representatives, the APIs have been enhanced to support customisation of authorisation controls. This includes support for the uploading of verification documents by an Authorised Representative in support of a benefit application.

A sample app for Authorised Representatives demonstrating how to call & customise IEG is also provided. As noted before, *This is not a reference app, and while some screens are provided as part of the sample, the data presented is mocked, not retrieved by REST APIs.*

Documentation, tools & guidance for all the above is provided to enable customers to

build out their own custom web applications using the Design System, Curam, guidance & a sample.

To build out their own customer web applications, customers will need to design the overall workflow for their web application themselves. For example, how clients are assigned to Authorized Representatives, how the workflow is controlled, completed and traced for auditability. This may require additional BPOs, Workflows and DB tables.

While some REST APIs are provided for the authorized representative business process, additional APIs may be needed depending on what information is being shown in the application.

Finally, customers will need to build the web application screens and the navigation between them, themselves.

For more information on building external public-facing web applications, see the *Creating public-facing applications with the Cúram Web Design System* guide.

For more information on the support for authorized representatives See the chapter *Universal Access for Authorized Representatives* in the *Cúram Universal Access Responsive Web Application* guide.

For more information on the design system see the *Curam Design System* guide and the Design System Storybook documentation which is included as part of the asset release.

IEG Script Guidance and Patterns

Users we're targeting

Daniel Butler - Developer/Script Designer @ Curam or HHS Agency

Oliver Morrison - Business Analyst/Script Designer @ Curam or HHS Agency

Maria Hernandez - Individual, Applicant for Social Services

Intelligent Evidence Gathering (IEG) is a rapid development tool for building and publishing forms online. While IEG provides a powerful set of scripting constructs to enable form building, it can sometimes take time to translate complex customer requirements into appropriate IEG solutions.

To understand the enhancement being provided in Cúram Universal Access Responsive Web Application v7.0.0 (Cúram V8.1.2) relating to IEG script guidance, we must look at the people who create online forms using IEG and those applying for benefit who will ultimately fill out the form.

Firstly there is Daniel, a developer and IEG script designer working for Cúram or the health and human services agency itself. For Daniel, explaining SPM concepts and solutions can be difficult and time consuming. He must carry out expensive Proof of concept work to validate complex design requirements.

Secondly, there is Oliver, a business analyst and IEG script designer also working for Cúram or the health and human services agency. Oliver spends time defining, documenting, and maintaining requirements for Daniel & this can be tedious when working with current processes and tools.

Lastly, there is Maria, the individual applying for support and services who will fill out the form designed by Daniel and Oliver. The quality of this form will impact Maria's user experience and access to support

IEG Script Design Process

Before CE v7.0.0

- No formal Script Design process, lack of consistency
- Difficult to collaborate
- Increased risk of wasted development time

In CE v7.0.0

- Clarification of IEG Concepts
- Reduced Time to Implementation
- Best Practices Demonstration
- Support and Troubleshooting
- Accelerated Team Learning

For new projects where an online form is needed, teams can either start with a blank canvas, which can lead to wasted time re-inventing patterns, iterating designs in code, or unsupported patterns of use, or they can begin with existing complex script architectures that are difficult to adapt, maintain, and test, resulting in slower iteration and more complex troubleshooting.

In either case, before CE v7.0.0, developing online forms using IEG forced project teams to rely heavily on learnings from previous projects or on a small group of highly experienced individuals. Even experienced teams had to perform expensive proof-of-concept work to validate designs or troubleshoot issues arising from complex patterns .

The IEG Sample guidance provided in CE v7.0.0 aims to alleviate these challenges and lower the barriers to teams delivering high-quality online forms using IEG.
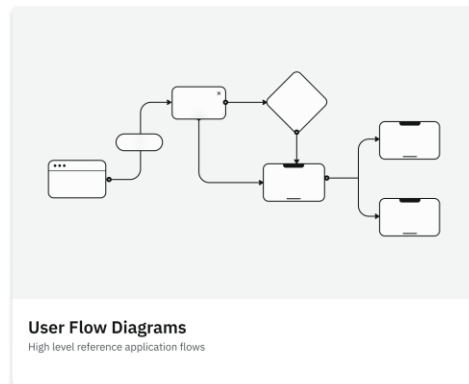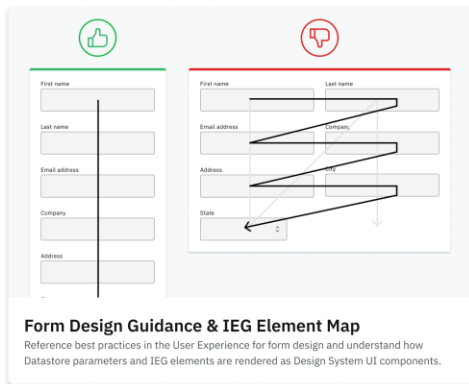
Script Designers can now work more efficiently with customers to collaborate, design, and build high-quality online forms with less support, by referencing and composing validated patterns and following guidance for best practice user experience for common requirements

Teams can share visual artifacts with customers to demonstrate the end goal and to gather better requirements.
The team has access to IEG-compliant solutions to common patterns.
New Script Designers can get up to speed quickly on what the product offers.

IEG Script Guidance and Patterns

Form Design Guidance & IEG Element Map
Reference best practices in the User Experience for form design and understand how Datastore parameters and IEG elements are rendered as Design System UI components.

User Flow Diagrams
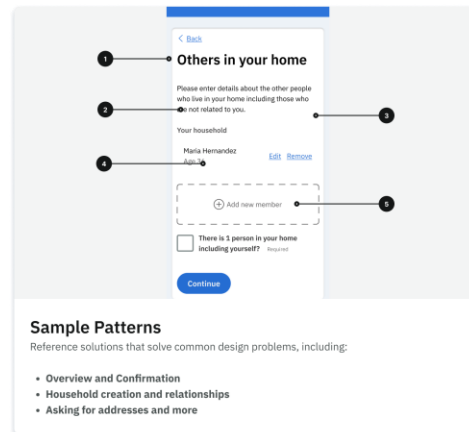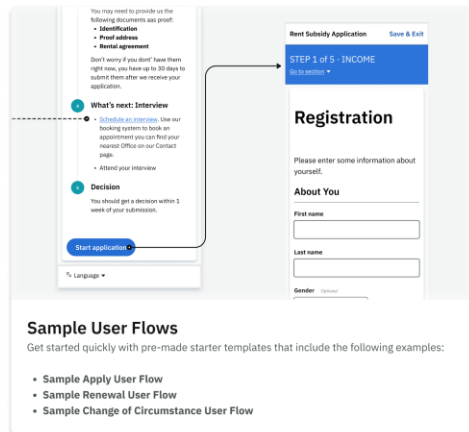High level reference application flows

The guidance achieves this by providing information and guidance in the following areas:

Firstly there is the Form Design Guidance & IEG Element Map. This provides best practices for form design, including recommendations on form flow and structure, advice on form content, form errors, validation, and choosing the correct input type. This guidance is designed to help you create user-friendly and efficient forms in your IEG scripts.

There is also material to help understand how Datastore parameters and IEG elements are rendered as Design System UI components.

Secondly, there are user flow diagrams which provide high-level reference script patterns demonstrating generalized recommended patterns of use.

IEG Script Guidance and Patterns

Sample User Flows

Get started quickly with pre-made starter templates that include the following examples:

- **Sample Apply User Flow**
- **Sample Renewal User Flow**
- **Sample Change of Circumstance User Flow**

Sample Patterns

Reference solutions that solve common design problems, including:

- **Overview and Confirmation**
- **Household creation and relationships**
- **Asking for addresses and more**

Thirdly, there are sample user flows allowing you to get started quickly with pre-made visual designs. Included are a sample flow for applying for benefit, a sample flow for renewing benefit and a sample flow for reporting a change of circumstance

Lastly, there are sample patterns, these are reference solutions that solve common design problems and include Overview and Confirmation views, household creation and relationship patterns, and guidance on asking for addresses.

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The guidance is provided as a PDF which can be found in the documentation packaged with the product asset.

This guidance can be shared at the beginning of a project to get the team and customers up to speed on the product and used throughout the script design process to reference features and patterns for specific requirements and finally to access the quality of the end user experience.

React 18 Upgrade & move to Vite

React 18 Upgrade & move to Vite

In CE v7.0.0, there have been 2 important changes made as part of our technical vitality work to ensure the CE tech stack is up to date.

1. The version of React used has been upgraded from v17 to v18
2. The build & bundling tool React-Scripts has been replaced with Vite.

What are the benefits?

- The move to Vite represents a significant effort to ensure the tech stack is kept current.
- Security stance greatly improved with the replacement of React-Scripts and the upgrade in package versions.
- Improved developer experience with faster build times and more control of build configuration.
- Unlocks new features in React and Vite to improve the development environment.
- Smooths the way for further upgrades in a fast-moving eco-system.

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The UA responsive web application is developed using React, a front-end JavaScript library for building web interfaces. The latest version of React was released last year so as part of CE v7.0.0 we have updated to that version – React 18.2.0.

Also prior to CE v7.0.0, we used the project build and bundling tool 'React-Scripts', this is no longer in active maintenance and so has been replaced in CE v7.0.0 with Vite, which is the new standard.

These updates were carried out as part of the CE technical vitality work to ensure we keep our tech stack up to date, to decrease legacy code and improve the vitality of CE.

By carrying out these updates there have been some significant benefits:
- The move to Vite represents a significant effort to ensure the tech stack is kept current. As React-scripts is no longer in active maintenance, it exposed several security vulnerabilities and had technical limitations.

- Our Security stance has greatly improved with the replacement of React-Scripts & the upgrade in package versions. When running the npm vulnerabilities report for v7.0.0, the security vulnerabilities were reduced by 93% (29 high in CE v6.3.1 down to 2 in CE v7.0.0).
- There is an Improved developer experience with faster build times and more control of build configuration
- New features in React and Vite improve the development environment. For example, now with Vite we have native support of ESM (Modern JS) which wasn't provided by react-scripts. Vite also provides flexible configuration that allows you to customize the production builds. The Vite ecosystem allows you to install a variety of plugins to support your development work. Regarding React 18, its most popular new feature is **concurrent rendering** for faster user UI interactions.
- Taken altogether, it smooths the way for further upgrades in a fast-moving eco-system.
- Overall we have a more stable and healthy application to ensure long-term vitality.

Technical Considerations

V7.0.0 is a MAJOR version change and includes breaking changes relating to both the Vite and React 18 upgrades.

Project teams should follow the upgrade guide published with the release to upgrade their codebase so that it is compatible with CE V7.0.0.

Examples of breaking changes include:
- Updating the project **package.json** to reflect changes in dependencies and scripts.
- The addition of new required configuration files.
- Updates to custom .html, .css and .js files for compatibility reasons.

The full set of steps is provided in the Upgrade Guide.