

# Business Requirements Specification

## Summer 2021 Readiness

Document Version: 32

054/1422/2021

### Revision History

Date	Version	Description
04/09/2021	1.0	Creation of Document
4/13/2021	1.0	Reformatting and updating from "Phasing" to "Grouping". Please refer to the Release User Group (RUG) slide for timing of requirement delivery.
4/22/2021	2.0	Addition of CIRA Notifications scope
<u>5/14/2021</u>	<u>3.0</u>	<u>Addition of RA Credit requirement (BRQ074). Addition of disclosure statement on UI requirement (BRQ075). Updated language, grouping, and system for BRQ035. Updated BRQ056. Deletion of BRQ057 as included in BRQ056. Updated language and grouping for BRQ030, BRQ031, BRQ032, BRQ033, BRQ034, BRQ038, BRQ040, Updated grouping for BRQ027, BRQ029, BRQ036, BRQ037, BRQ039, BRQ042. Deletion of BRQ028 as no longer needed due to updated group criteria.</u>

 <b>California ISO</b>	<b>Technology</b>	<b>Template Version:</b>	<b>6</b>
		<b>Document Version:</b>	<del>23</del>
<b>Summer 2021 Readiness Business Requirements Specification - Planning</b>		<b>Date Created:</b>	<b>1/26/2021</b>

 <b>California ISO</b>	<b>Technology</b>	<b>Template Version:</b>	<b>6</b>
		<b>Document Version:</b>	<b><u>23</u></b>
<b>Summer 2021 Readiness Business Requirements Specification - Planning</b>		<b>Date Created:</b>	<b>1/26/2021</b>

**Table of Contents**

**1 Introduction.....43**

    1.1 Purpose .....43

**2 Intellectual Property Ownership .....54**

    2.1 Guidelines.....54

    2.2 Acronyms and Definitions Table .....65

**3 Details of Business Need/Problem .....76**

    3.1 Description.....76

**4 Business Impacts .....87**

    4.1 Business Practice Manuals (BPM) .....87

    4.2 Other.....98

**5 Business Requirements .....109**

    5.1 Business Process: Manage Resource Adequacy Requirements (MMR LII) – CAISO ISO Resource Adequacy Application (CIRA) [CIRA Notifications Scope] .....109

*Business Requirements* .....109

    5.2 Business Process: Manage Resource Adequacy Requirements (MMR LII) – CAISO ISO Resource Adequacy Application (CIRA) [New Data Points for Today's Outlook/ISO Today] .....1244

*Business Requirements* .....1244

    5.3 Business Process: Manage Resource Adequacy Requirements (MMR LII) – CAISO ISO Resource Adequacy Application (CIRA) [Today's Outlook/ISO Today, and Seven Day Forecast]] .....1544

*Business Requirements* .....1544

    5.4 Business Process: Manage Resource Adequacy Requirements (MMR LII) – CAISO ISO Resource Adequacy Application (CIRA) [New Data Points for Today's Outlook Hourly RA] .....1746

*Business Requirements* .....1746

    5.5 Business Process: Manage Resource Adequacy Requirements (MMR LII) – CAISO ISO Resource Adequacy Application (CIRA) [New Data Points for Today's Outlook Reserve Requirements].....1948

*Business Requirements* .....1948

 <b>California ISO</b>	<b>Technology</b>	<b>Template Version:</b>	<b>6</b>
		<b>Document Version:</b>	<del>23</del>
<b>Summer 2021 Readiness Business Requirements Specification - Planning</b>		<b>Date Created:</b>	<b>1/26/2021</b>

# 1 Introduction

## 1.1 Purpose

The purpose of this document is to capture and record a description of what the Users and Business Stakeholders of the project wish to obtain, by providing high level business requirements. This document establishes the basis for the agreement between the initiators and implementers of the project. The information in this document serves as input to determine the scope of projects and all Business Process Modeling and System Requirements Specifications (SRS) efforts.

Business requirements are what must be delivered to provide value for the Users and Business Stakeholders. Systems, software, and processes are the ways (how) to deliver, satisfy, or meet the business requirements (what).

- **Initial BRS:** The Initial BRS will provide sufficient information to determine the scope of the project and will provide the functional business requirements needed to make the Architecture Decision.
- **Final BRS:** Following the Architecture Decision, the remaining non-functional business requirements, such as data, performance, web services, and security can be added to complete the Final BRS.

### Background:

A historic heat storm impacted western US for several consecutive days in mid-August 2020, causing energy supply shortages that led to two rotating power outages in the ISO footprint on August 14th and 15th.

ISO commits to the development of actions to prevent supply gaps in advance of Summer 2021.

This initiative focus on near term efforts on market rules and procedural changes necessary to be ready to manage heat events next summer. Policy changes that require Tariff amendments need to be filed with FERC by April for June implementation and require approval by March EIM Governing Body and ISO Board of Governors. This BRS covers Summer 2021 Readiness RA Non-Policy scope.

### Scope:

1. California ISO Interface for Resource Adequacy Application (CIRA) Notifications
2. New Data Points for Today's Outlook RA Cap
  - a. Display of daily Operational RA and Day Ahead Demand Load Forecast in Today's Outlook and ISO Today (mobile app)
  - b. Seven Day Forecast
  - c. Hourly RA
  - d. Reserve Requirements

 <b>California ISO</b>	<b>Technology</b>	<b>Template Version:</b>	<b>6</b>
		<b>Document Version:</b>	<b><u>23</u></b>
<b>Summer 2021 Readiness Business Requirements Specification - Planning</b>		<b>Date Created:</b>	<b>1/26/2021</b>

## 2 Intellectual Property Ownership

Intellectual Property covers a broad array of information and materials, including written works, computer programs, software, business manuals, processes, symbols, logos, and other work products. Determining ownership of Intellectual Property is very important in preserving the rights of the California ISO, and helps to avoid Intellectual Property infringement issues. In considering the business requirements or service requirements to be performed, the business owner of the project must determine Intellectual Property Ownership.

### 2.1 Guidelines

Intellectual Property ownership must be considered by all applicable stakeholders before the services are performed. The level of analysis is two-fold:

1. One, the business owner must determine if the Intellectual Property necessary to perform the services is owned by the California ISO or whether it must be obtained from a third party. Once the California ISO has secured the proper Intellectual Property rights to perform the services (i.e., the Intellectual Property is owned by the California ISO or we have licensed it from a third party), the California ISO can undertake the next step.
2. The second step in the analysis is to consider whether new Intellectual Property will be created as a result of the business requirements or service requirements to be performed, and how that Intellectual Property will be owned and protected by the California ISO.

In order to assist the business owner in the analysis previously described, refer to the California Intellectual Property Policy available at:

<http://www.caiso.com/rules/Pages/LegalPoliciesNotices/Default.aspx>, which provides a brief tutorial on what Intellectual Property is and how the California ISO can protect its Intellectual Property. Contact the Legal Department if you have any questions regarding Intellectual Property.

**There are no impacts to intellectual property based on the requirements stated in this document.**

 <b>California ISO</b>	<b>Technology</b>	<b>Template Version:</b>	<b>6</b>
		<b>Document Version:</b>	<b><u>23</u></b>
<b>Summer 2021 Readiness Business Requirements Specification - Planning</b>		<b>Date Created:</b>	<b>1/26/2021</b>

## 2.2 Acronyms and Definitions Table

Acronym	Definition
<u>CIRA</u>	<u>CAISO ISO Resource Adequacy Application</u>
LSE	Load Serving Entity
LRA	Local Regulatory Authority
OIA	Outage Impact Analysis
RA	Resource Adequacy
ROC	Rules of Conduct
UI	User Interface

 <b>California ISO</b>	<b>Technology</b>	<b>Template Version:</b>	<b>6</b>
		<b>Document Version:</b>	<del>23</del>
<b>Summer 2021 Readiness Business Requirements Specification - Planning</b>		<b>Date Created:</b>	<b>1/26/2021</b>

### 3 Details of Business Need/Problem

#### 3.1 Description

<b>Business Opportunity/Problem Statement:</b>	
<b>What:</b>	This initiative focuses on near term efforts on Resource Adequacy readiness to be ready to manage heat events in Summer 2021.
<b>When:</b>	June 1, 2021
<b>Why do we have this opportunity/problem:</b>	A historic heat storm impacted western US for several consecutive days in mid-August 2020, causing energy supply shortages that led to two rotating power outages in the ISO footprint on August 14th and 15th. ISO commits to the development of actions to prevent supply gaps in advance of Summer 2021.
<b>Who does this opportunity/problem impact:</b>	Market Participants

 <b>California ISO</b>	<b>Technology</b>	<b>Template Version:</b>	<b>6</b>
		<b>Document Version:</b>	<b>23</b>
<b>Summer 2021 Readiness Business Requirements Specification - Planning</b>		<b>Date Created:</b>	<b>1/26/2021</b>

## 4 Business Impacts

### 4.1 Business Practice Manuals (BPM)

BPM	Description of Impact(s)
BPM Change Management	Not Impacted
Candidate CRR Holder Registration	Not Impacted
Compliance Monitoring	Not Impacted
Congestion Revenue Rights	Not Impacted
Credit Management and Market Clearing	Not Impacted
Definitions and Acronyms	Not Impacted
Demand Response	Not Impacted
Direct Telemetry	Not Impacted
Distributed Generation for Deliverability	Not Impacted
Energy Imbalance Market	Not Impacted
Generator Interconnection and Deliverability Allocation Procedures	Not Impacted
Generator Interconnection Procedures	Not Impacted
Generator Management	Not Impacted
Managing Full Network Model	Not Impacted
Market Instruments	Not Impacted
Market Operations	Not Impacted
Metering	Not Impacted
Outage Management	Not Impacted
Reliability Coordinator Services	Not Impacted
Reliability Requirements	Not Impacted
Rules of Conduct Administration	Not Impacted
Scheduling Coordinator Certification and Termination	Not Impacted

 <b>California ISO</b>	<b>Technology</b>	<b>Template Version:</b>	<b>6</b>
		<b>Document Version:</b>	<b><u>23</u></b>
<b>Summer 2021 Readiness Business Requirements Specification - Planning</b>		<b>Date Created:</b>	<b>1/26/2021</b>

BPM	Description of Impact(s)
<b>Settlements and Billing</b>	Not Impacted
<b>Transmission Planning Process</b>	Not Impacted

## 4.2 Other

Impact	Description (optional)
<b>Market Simulation</b>	<b>No</b>
<b>Market Participant Impact</b>	<b>Yes</b>
<b>User Acceptance Testing (UAT)</b>	<b>Yes</b>
<b>Internal Training</b>	<b>No</b>
<b>External Training</b>	<b>Yes</b>
<b>Policy Initiative</b>	Part of Summer 2021 Readiness. This initiative document covers RA Non-Policy Scope.
<b>Development/Vendor</b>	Internal
<b>Architectural Framework and Roadmap</b>	Design will follow existing architectural framework and will align with the roadmap.

 <b>California ISO</b>	<b>Technology</b>	<b>Template Version:</b>	<b>6</b>
		<b>Document Version:</b>	<b><u>23</u></b>
<b>Summer 2021 Readiness Business Requirements Specification - Planning</b>		<b>Date Created:</b>	<b>1/26/2021</b>

## 5 Business Requirements

The sections below describe the business processes and the associated business requirements involved in the project. These may represent high-level functional, non-functional, reporting, and/or infrastructure requirements. These business requirements directly relate to the high-level scope items determined for the project.

**Note: Refer to Release User Group (RUG) Summer Readiness 2021 for deployment dates related to grouping.**

### 5.1 Business Process: Manage Resource Adequacy Requirements (MMR LII) – CAISO ISO Resource Adequacy Application (CIRA) [CIRA Notifications Scope]

#### Business Requirements

ID#	Business Feature	Requirement Type	Potential Application(s) Impacted
S21R – BRQ001	System must have the ability to send e-mails to LRAs if one or more of their LSEs have a late or missing RA Plan for the annual and monthly RA submittal time period.  Note: Automated and on-demand email.	Core  Group 1	CIRA
S21R – BRQ006	System shall create validation rule to not allow blank entry on UI for user contact information.  Note: LRA contact information includes: name, email, phone, and entity.	Core  Group 1	CIRA

 <b>California ISO</b>	<b>Technology</b>	<b>Template Version:</b>	<b>6</b>
		<b>Document Version:</b>	<del>23</del>
<b>Summer 2021 Readiness Business Requirements Specification - Planning</b>		<b>Date Created:</b>	<b>1/26/2021</b>

ID#	Business Feature	Requirement Type	Potential Application(s) Impacted
S21R – BRQ012	<p>SC of an LSE that has an RA obligation but is not committing RA capacity for the month will have checkbox in CIRA to note their situation in lieu of submitting blank RA plan. Includes those that currently submit blank RA Plans because they have RA credits.</p> <p>Note: Checkbox to be added to notate this. Specific language to be added next to checkbox. IT team will look at other options besides the checkbox for solving this if needed.</p>	Core  Group 1	CIRA

 <b>California ISO</b>	<b>Technology</b>	<b>Template Version:</b>	<b>6</b>
		<b>Document Version:</b>	<b><u>23</u></b>
<b>Summer 2021 Readiness Business Requirements Specification - Planning</b>		<b>Date Created:</b>	<b>1/26/2021</b>

## 5.2 Business Process: Manage Resource Adequacy Requirements (MMR LII) – CAISO ISO Resource Adequacy Application (CIRA) [New Data Points for Today's Outlook/ISO Today]

### Business Requirements

ID#	Business Feature	Requirement Type	Potential Application(s) Impacted
S21R – BRQ027	ISO Today (mobile application) must have the same information as Today's Outlook.  Note: Specific information in BRQ030.	Core  Group <u>21</u>	Today's Outlook / ISO Today
<del>S21R – BRQ028</del>	<del>System must display the daily Operational RA for the next seven days where daily values would be replaced with a rolling seven day forecast.</del>  <del>Example: Today the future seven days would be posted, and tomorrow the future seven days would be posted. For March 1<sup>st</sup>, forecast includes March 2<sup>nd</sup> to March 8<sup>th</sup> posted to March 1<sup>st</sup> (D+1 to D+7).</del>	<del>Core  Group 1</del>	<del>Today's Outlook / ISO Today</del>
S21R – BRQ029	System must display the Day Ahead Demand Load Forecast for the next seven days where daily values would be replaced with a rolling seven day forecast.  Example: Today the future seven days would be posted, and tomorrow the future seven days would be posted. For March 1 <sup>st</sup> , forecast includes March 2 <sup>nd</sup> to March 8 <sup>th</sup> posted to March 1 <sup>st</sup> (D+1 to D+7).	Core  Group <u>21</u>	Today's Outlook / ISO Today



ID#	Business Feature	Requirement Type	Potential Application(s) Impacted
S21R – BRQ030	System must display the <u>daily-Hourly</u> Operational RA and Day Ahead Demand Load Forecast in the same display.	Core  Group <u>24</u>	Today's Outlook / ISO Today
S21R – BRQ031	System shall overwrite the future horizon days 2-7 demand load forecast data and <u>Hourly</u> Operational RA data each day.  Note: No history of days 2-7 will be maintained.	Core  Group <u>24</u>	Today's Outlook / ISO Today
S21R – BRQ032	System shall retain the historical data of the day ahead demand load forecast data and <u>Hourly</u> Operational RA data and will be retained for three years.  Note: Kept for a duration in line with existing demand load forecast data retention policy of up to three years and not longer.	Core  Group <u>24</u>	Today's Outlook / ISO Today
S21R – BRQ033	The <u>CAISO</u> Day Ahead Demand Load Forecast and <u>Hourly</u> Operational RA data shall be available before 9:30AM to provide information prior to the close of the day ahead market.	Core  Group <u>24</u>	Today's Outlook / ISO Today
S21R – BRQ034	System must have no backfill capability for the <u>Hourly</u> Operational RA and <u>CAISO</u> Day Ahead Demand Load Forecast.  Note: Values will not be changed once sent out for the multiple days ahead. Day Ahead will be kept as is.	Core  Business Process  Group <u>24</u>	Today's Outlook / ISO Today

 <b>California ISO</b>	<b>Technology</b>	<b>Template Version:</b>	<b>6</b>
		<b>Document Version:</b>	<b><u>23</u></b>
<b>Summer 2021 Readiness Business Requirements Specification - Planning</b>		<b>Date Created:</b>	<b>1/26/2021</b>

ID#	Business Feature	Requirement Type	Potential Application(s) Impacted
S21R – BRQ035	<p><u>Data-Calculation</u> received will not update previous hourly data (this is in relation to the <u>Hourly</u> Operational RA data).</p> <p>Example: The 1PM <del>broadcast-calculation</del> will only update the data from 1PM and on for the current day. When 1PM data received 8AM data should not be updated.</p>	<p>Core</p> <p>Business Process</p> <p>Group <u>24</u></p>	<p><del>CIRA</del>Today's Outlook / ISO Today</p>
S21R – BRQ036	<p>System shall show the data from today and from the next seven days in one graph.</p>	<p>Core</p> <p>Group <u>24</u></p>	<p>Today's Outlook / ISO Today</p>

 <b>California ISO</b>	<b>Technology</b>	<b>Template Version:</b>	<b>6</b>
		<b>Document Version:</b>	<b><u>23</u></b>
<b>Summer 2021 Readiness Business Requirements Specification - Planning</b>		<b>Date Created:</b>	<b>1/26/2021</b>

### 5.3 Business Process: Manage Resource Adequacy Requirements (MMR LII) – CAISO ISO Resource Adequacy Application (CIRA) [Today’s Outlook/ISO Today, and Seven Day Forecast]

#### Business Requirements

ID#	Business Feature	Requirement Type	Potential Application(s) Impacted
S21R – BRQ037	On “Today’s Outlook/ISO Today,” system must display “Demand” and “Net Demand” on one display.  Note: Net Demand Forecast = Load Forecast – Wind Forecast – Solar Forecast.	Core  Group <u>24</u>	Today’s Outlook / ISO Today
S21R – BRQ038	On “Today’s Outlook/ISO Today,” system must display the <del>daily-Hourly</del> Operational RA line and <del>daily-Hourly</del> Net Operational RA line.  Note: Net <del>Daily-Hourly</del> Operational RA = <del>Total Daily-Hourly</del> Operational RA – <del>Shown Wind RA Daily RA (from wind)</del> – <del>Shown Solar RA Daily RA (from solar)</del>	Core  Group <u>24</u>	Today’s Outlook / ISO Today
S21R – BRQ039	On the Seven Day Forecast Display, system must display “Demand” and “Net Demand” on one display.  Note: Net Demand Forecast = Load Forecast – Wind Forecast – Solar Forecast.	Core  Group <u>24</u>	Today’s Outlook / ISO Today
S21R – BRQ040	On the Seven Day Forecast Display, system must display the <del>daily-Hourly</del> Operational RA and <del>daily Hourly</del> Net Operational RA.	Core  Group <u>24</u>	Today’s Outlook / ISO Today

 <b>California ISO</b>	<b>Technology</b>	<b>Template Version:</b>	<b>6</b>
		<b>Document Version:</b>	<b><u>23</u></b>
<b>Summer 2021 Readiness Business Requirements Specification - Planning</b>		<b>Date Created:</b>	<b>1/26/2021</b>

ID#	Business Feature	Requirement Type	Potential Application(s) Impacted
S21R – BRQ041	System must display viewable options: Demand, Net Demand, or both (Demand and Net Demand).  Note: Just for the user session.	Core  Group 2	Today's Outlook / ISO Today
S21R – BRQ042	System shall add the current day to the existing Seven Day Forecast Display.	Core  Group <u>24</u>	Today's Outlook / ISO Today

 <b>California ISO</b>	<b>Technology</b>	<b>Template Version:</b>	<b>6</b>
		<b>Document Version:</b>	<b><u>23</u></b>
<b>Summer 2021 Readiness Business Requirements Specification - Planning</b>		<b>Date Created:</b>	<b>1/26/2021</b>

#### 5.4 Business Process: Manage Resource Adequacy Requirements (MMR LII) – CAISO ISO Resource Adequacy Application (CIRA) [New Data Points for Today's Outlook Hourly RA]

##### Business Requirements

ID#	Business Feature	Requirement Type	Potential Application(s) Impacted
S21R – BRQ051	System shall consume solar and wind forecasts for days 5-7.	Core  Group <u>12</u>	OASIS
S21R – BRQ052	System must allow users to view one day of data up to seven days ahead.  Note: User can only view one day at a time.	Core  Group <u>12</u>	OASIS
S21R – BRQ053	System shall consume solar and wind forecasts for days 5-7.  Note: Report is Variable Energy Resource Forecast.	Core  Group <u>12</u>	CMRI
S21R – BRQ054	System must display rolling seven day ahead.	Core  Group <u>12</u>	CMRI
S21R – BRQ056	System must display hourly RA values. <u>Hourly RA values must reflect:</u> <ul style="list-style-type: none"> <li>• <u>Reduced RA due to outages</u></li> </ul>	Core  Group 2	Today's Outlook / ISO Today

 <b>California ISO</b>	<b>Technology</b>	<b>Template Version:</b>	<b>6</b>
		<b>Document Version:</b>	<b><u>23</u></b>
<b>Summer 2021 Readiness Business Requirements Specification - Planning</b>		<b>Date Created:</b>	<b>1/26/2021</b>

ID#	Business Feature	Requirement Type	Potential Application(s) Impacted
	<ul style="list-style-type: none"> <li>• <u>Must exclude the forecasted value for wind and solar RA resources</u></li> </ul> <p><u>Note: Net Hourly Operational RA = Hourly Operational RA - Shown Wind RA - Shown Solar RA</u></p> <p><u>Note: This will replace Daily constant RA values.</u></p>		
S21R – BRQ057	<p>Hourly RA values must reflect:</p> <ul style="list-style-type: none"> <li>• <del>Reduced RA due to outages</del></li> <li>• <del>Must reflect the forecasted value for wind and solar</del></li> </ul> <p><del>Hourly Net Operational RA = Hourly Operational RA – Hourly Wind RA Forecast – Hourly Solar RA Forecast</del></p>	Core  Group 2	Today's Outlook / ISO Today
S21R – BRQ058	The Seven Day Display shall include Hourly Load Forecast and Hourly Net Demand Forecast.	Core  Group 2	Today's Outlook / ISO Today

 <b>California ISO</b>	<b>Technology</b>	<b>Template Version:</b>	<b>6</b>
		<b>Document Version:</b>	<del>23</del>
<b>Summer 2021 Readiness Business Requirements Specification - Planning</b>		<b>Date Created:</b>	<b>1/26/2021</b>

## 5.5 Business Process: Manage Resource Adequacy Requirements (MMR LII) – CAISO ISO Resource Adequacy Application (CIRA) [New Data Points for Today's Outlook Reserve Requirements]

### Business Requirements

ID#	Business Feature	Requirement Type	Potential Application(s) Impacted
S21R – BRQ063	“Today’s Outlook/ISO Today” must display reserve lines.	Core Group 2	Today’s Outlook / ISO Today
S21R – BRQ064	System shall use reserves in day-ahead and real-time market results data for the current day display.	Core Group 2	Today’s Outlook / ISO Today
S21R – BRQ065	For the Seven Day Forecast display, system shall use 1.5% of load for estimated regulation reserve, and use 6% of load for estimated contingency reserves (Spin & NonSpin) data.	Core Group 2	Today’s Outlook / ISO Today
S21R – BRQ066	System must have option to highlight Reserves.	Core Group 2	Today’s Outlook / ISO Today
S21R – BRQ067	System must have defined legends for all displays.	Core Group 2	Today’s Outlook / ISO Today

 <b>California ISO</b>	<b>Technology</b>	<b>Template Version:</b>	<b>6</b>
		<b>Document Version:</b>	<del>23</del>
<b>Summer 2021 Readiness Business Requirements Specification - Planning</b>		<b>Date Created:</b>	<b>1/26/2021</b>

ID#	Business Feature	Requirement Type	Potential Application(s) Impacted
<a href="#"><u>S21R – BRQ074</u></a>	<a href="#"><u>System must display the RA Credits line for the Current Day and Seven Day Displays.</u></a>	<a href="#"><u>Core</u></a>  <a href="#"><u>Group 2</u></a>	<a href="#"><u>Today's Outlook / ISO Today</u></a>
<a href="#"><u>S21R – BRQ075</u></a>	<a href="#"><u>System must include disclosure statement on the UI.</u></a>	<a href="#"><u>Core</u></a>  <a href="#"><u>Group 2</u></a>	<a href="#"><u>Today's Outlook / ISO Today</u></a>