



Reliability Matters

ARRC TAM Phase 2 Requirements Matrix

Color Coding

Essential (High Priority)
Desired (Medium Priority)
Optional (Low Priority)
Priority Not Set

Matrix

		Asset Category	Rolling Stock	Rolling Stock	Fixed Guideway	Fixed Guideway	Fixed Guideway	Service Vehicles	Facilities	Communications
		Asset Class	Locomotive	Railcars	Track	Bridge	Signal	General	Buildings	General
Feature Category	Feature	Req Name	Req Desc Asset Type	General	General	General	General	General	General	General
Asset Hierarchy, Registry, and Info	Asset Data	Central System of Record	Objective is a central source of information including asset and work activity; acknowledging that specialized systems may be used (and possibly linked or integrated) for configuration, status, and notifications	Essential	Essential	Essential	Essential	Essential	Essential	Essential
Asset Hierarchy, Registry, and Info	Asset Data	Basic Asset Attributes	Ability to record basic asset data common to asset management systems including an ARRC unique identifier, year, make, model, serial number, color, etc.	Essential	Essential	Essential	Essential	Essential	Desired	Optional
Asset Hierarchy, Registry, and Info	Asset Data	NTD Reporting Attributes	Assets should have attributes that allow for direct or easy mapping for NTD reporting without the need to maintain separately in Excel.	Essential	Essential	Essential	Desired	Optional	Desired	Optional
Asset Hierarchy, Registry, and Info	Asset Data	Asset Data System Identifiers	Ability to support multiple external system identifiers for an asset if they differ from internal ARRC identifiers	Essential	Essential	Essential	Optional	Essential	Desired	Essential
Asset Hierarchy, Registry, and Info	Asset Data	Asset Data Integration	Ability to synchronize or integrate basic asset information with external vendors / systems minimize need to manually check and update records for accuracy.	Essential	Essential	Essential	Optional	Essential	Optional	Optional
Asset Hierarchy, Registry, and Info	Asset Data	Document Management and Linking	Support a centralized approach to storing and accessing asset-related documents including drawings, schedules, manuals, pictures, etc. for both digital and paper documents	Essential	Desired	Essential	Essential	Essential	Essential	Essential



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Feature Category	Feature	Req Name	Req Desc Asset Type	General	General	General	General	General	General	General
Asset Hierarchy, Registry, and Info	Asset Data	Mobile Access to Documents	Ability to access digital documents outside of the office; if on mobile possibly allow offline mode by caching documents related to the assets	Essential	Optional	Desired	Essential	Essential	Desired	Essential
Asset Hierarchy, Registry, and Info	Asset Data	Link (both ways) to GIS	Support hyperlinking from asset management system to GIS and from GIS to asset management	Desired	Optional	Desired	Desired	Desired	Desired	Desired
Asset Hierarchy, Registry, and Info	Asset Data	GPS/GIS Position Information (Fixed)	Ability to record GPS locations for GIS at the asset level; either from device or by selecting on map	Essential	Priority Not Set	Desired	Desired	Optional	Desired	Essential
Asset Hierarchy, Registry, and Info	Asset Data	Location by Mile Post	In addition to a named location and GPS / GIS coordinates support the location by ARRC Mile Post	Essential	Priority Not Set	Essential	Essential	Optional	Desired	Essential
Asset Hierarchy, Registry, and Info	Hierarchy	Asset Hierarchy	Model and enforce hierarchical relationships between assets; particularly parent-child	Essential	Optional	Essential	Essential	Essential	Desired	Essential
Asset Hierarchy, Registry, and Info	Hierarchy	Classes or Grouping of Assets	Organize and manage equipment as a class or group; useful for planned maintenance programs and reporting	Essential	Essential	Optional	Essential	Essential	Desired	Desired
Asset Hierarchy, Registry, and Info	Hierarchy	Components	Include components and sub-components, assemblies, systems and similar entities	Essential	Desired	Essential	Desired	Desired	Desired	Optional
Asset Availability and Status	Ownership	Ownership Status	Ability to indicate owner and any interested parties in the asset	Essential	Optional	Optional	Essential	Optional	Optional	Desired
Asset Availability and Status	Ownership	Owner Info	Contact information of the owner of assets; especially leased or rented equipment	Essential	Optional	Optional	Essential	Essential	Optional	Essential



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Feature Category	Feature	Req Name	Req Desc Asset Type	General	General	General	General	General	General	General	General
Asset Availability and Status	Status	Condition Assessment - Risk	Support a risk / consequence assessment on assets (or their components); could be used for weighting condition assessment at higher level of hierarchy	Essential	Optional	Desired	Essential	Desired	Optional	Desired	Desired
Asset Availability and Status	Status	Status - Location	Asset location in as near real-time as it is possible to have the status changed by a system or person	Essential	Priority Not Set	Priority Not Set	Optional	Desired	Optional	Optional	Optional
Asset Availability and Status	Status	GPS/GIS Position Information (Mobile)	Utilize GPS not only for current but also historical data for assets that are mobile	Desired	Priority Not Set	Priority Not Set	Optional	Optional	Essential	Optional	Desired
Asset Availability and Status	Status	Asset Assignment	Ability to assign assets to a department with a start / end date that will also summarize usage from readings, PMs, and work orders (e.g. costs, fuel, miles, hours)	Essential	Optional	Priority Not Set	Optional	Essential	Essential	Optional	Essential
Asset Availability and Status	Status	Asset Rate and Usage Calculation	Support mechanism to calculate costs of asset and which groups used the asset during the period. This calculation may be an initial input to Finance for cost allocation.	Essential	Optional	Priority Not Set	Optional	Optional	Essential	Optional	Optional
Asset Availability and Status	Status	Condition Rating System	Support a condition rating system for assets (e.g. 1 to 5)	Essential	Essential	Desired	Essential	Essential	Essential	Desired	Desired
Asset Availability and Status	Status	Condition Assessment	Ability to record, store, and report periodic condition assessments with criteria guidance as well as previous ratings and work performed since the last assessment	Essential	Essential	Essential	Essential	Essential	Essential	Desired	Essential
Asset Availability and Status	Status	Import External Transaction Data	Ability to import transaction data from external systems (and when needed ability to enter that transaction manually)	Essential	Optional	Priority Not Set	Optional	Optional	Essential	Desired	Desired



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Feature Category	Feature	Req Name	Req Desc Asset Type	General	General	General	General	General	General	General
Asset Availability and Status	Availability	Out of Service Coding and Duration	Capture out of service codes and time duration (e.g delay impacting operations, or no impact - may include status such as waiting for parts, shop space, labor, etc.); intent is to support reliability analysis and reporting	Essential	Essential	Optional	Optional	Essential	Optional	Essential
Asset Availability and Status	Availability	Availability Calculations	Show availability over time at asset and also at hierarchy (grouping of assets) levels. Differentiate between types of out of service (e.g. seasonal or intentionally stored)	Essential	Essential	Essential	Optional	Essential	Optional	Essential
Asset Availability and Status	Availability	Availability - Seasonal Variations	Ability to indicate seasonal status (e.g. open /closed, not being used, etc.)	Desired	Desired	Desired	Optional	Optional	Optional	Optional
Configuration Management	General	Asset Model Configuration	Control over asset configuration design with ability to define rules for components and parts	Essential	Desired	Desired	Priority Not Set	Optional	Desired	Optional
Configuration Management	General	Change Management Process	Ability to have a change management process for components of the assets. May include things such as checklists, test procedures, review process, etc.	Essential	Desired	Desired	Desired	Optional	Desired	Optional
Configuration Management	General	Integration with Configuration Management Systems	Ability to integrate or synchronize data with external configuration management systems to avoid manual duplication or cross-checking of data.	Essential	Priority Not Set	Optional	Priority Not Set	Essential	Desired	Optional
Fault/Problem Detection	General	Capture Reasons for Failure	Ability to capture reason(s) for failure; preferably through standardized coding	Essential	Priority Not Set	Desired	Optional	Essential	Desired	Essential



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Feature Category	Feature	Req Name	Req Desc Asset Type	General	General	General	General	General	General	General	General
Fault/Problem Detection	General	Data from Diagnostic Systems	Ability to hyperlink to or record and report on information from diagnostic systems and testing vendors	Desired	Essential	Desired	Desired	Optional	Optional	Desired	Essential
Fault/Problem Detection	General	Data from External Asset Management Systems	Ability to hyperlink to or compile information from external asset management systems including current state, alerts, and errors / issues	Essential	Essential	Optional	Priority Not Set	Essential	Optional	Desired	Essential
Planned Maintenance and Inspection	General	Common Inspection Record to Satisfy Multiple Agencies	Desire a means of managing asset and inspection information that can be used to satisfy multiple agency regulatory requirements (e.g. FRA and FTA)	Essential	Essential	Essential	Essential	Essential	Optional	Desired	Optional
Planned Maintenance and Inspection	General	Inspection Data Retention Periods	Ability to retain electronic copies of records indefinitely; Federal agencies usually allow for only a certain period of time	Desired	Essential	Desired	Desired	Optional	Priority Not Set	Desired	Optional
Planned Maintenance and Inspection	General	Digital Workflows for Review and Approval	Support digital workflows for review and approval for inspections (and where otherwise required) that is consistent with any regulatory workflow requirements	Desired	Optional	Essential	Essential	Optional	Optional	Desired	Desired
Planned Maintenance and Inspection	General	Pre-Use and Frequent Inspection Checklists	Ability to record frequent (daily) or pre-use inspections with a checklist; support different checklists based on asset category and characteristics	Essential	Essential	Priority Not Set	Priority Not Set	Optional	Essential	Desired	Desired
Planned Maintenance and Inspection	General	Digital-First Inspections	Ability to record inspections digitally in the field (with an offline mode available); subject to any regulatory requirements and workflow requirements	Essential	Essential	Essential	Essential	Essential	Essential	Desired	Desired



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Feature Category	Feature	Req Name	Req Desc Asset Type	General	General	General	General	General	General	General	General
Planned Maintenance and Inspection	General	Inspection Schedules	Support ability to schedule recurring inspections that will automatically create a work order	Essential	Desired	Essential	Essential	Essential	Essential	Essential	Essential
Planned Maintenance and Inspection	General	PM Service Calculation	Ability to calculate PM service requirements on more than one aspect of asset usage (e.g. calendar time, hours, miles, fuel usage, etc.)	Essential	Essential	Optional	Priority Not Set	Optional	Essential	Essential	Optional
Planned Maintenance and Inspection	General	Automated Compliance Tracking and Planning	Automated planning and compliance tracking of regulatory inspection requirements	Essential	Essential	Essential	Essential	Optional	Essential	Desired	Optional
Planned Maintenance and Inspection	General	PM Job Plan	Ability to setup standard template for labor and parts for preventative maintenance routines to allow for forecasting of parts and labor needed	Desired	Desired	Desired	Desired	Optional	Desired	Essential	Optional
Planned Maintenance and Inspection	General	Generate Work Orders from Inspection Results	Ability to generate work orders from inspection results (would typically be categorized as corrective actions)	Essential	Essential	Essential	Essential	Essential	Essential	Essential	Essential
Planned Maintenance and Inspection	General	PM Notification	Ability for notifications to be automatically sent to maintenance and assigned user group when a PM is due (or created by the system)	Desired	Desired	Desired	Priority Not Set	Optional	Essential	Desired	Optional
Planned Maintenance and Inspection	General	Contractors for Preventative Maintenance	Ability to define vendors which are used for PM and inspection activities on assets, systems or components	Desired	Desired	Priority Not Set	Desired	Optional	Optional	Optional	Optional
Planned Maintenance and Inspection	General	Incorporate Season and Weather	Accommodate recording season and weather into usage information for preventative or predictive maintenance planning and	Essential	Optional	Optional	Priority Not Set	Optional	Optional	Desired	Optional



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Feature Category	Feature	Req Name	Req Desc Asset Type	General	General	General	General	General	General	General	General
Work Orders and Work Order Management	General	Task Coding on Work Orders	Ability to code tasks on work orders that may include system, subsystem, component, position, and activity (e.g. inspect, install, remove, repair, replace) for accurate information on maintenance activity and costs	Desired	Desired	Essential	Essential	Essential	Essential	Essential	Essential
Work Orders and Work Order Management	General	Complaint / Cause / Correction (3C's)	Support the ability to record complaint, cause, and correction in a standardized way for more efficient failure analysis and identification of common issues, causes, and their resolution	Essential	Optional	Priority Not Set	Essential	Essential	Essential	Desired	Essential
Work Orders and Work Order Management	General	Mobile Digital Work Orders	Record data where and when the work occurs (create, update, and close) through mobile digital work orders that support an offline mode.	Essential	Essential	Essential	Essential	Essential	Essential	Desired	Essential
Work Orders and Work Order Management	General	SLAs for Response Times	Support the ability to set SLAs for response time on asset groups or categories and to record performance against them	Desired	Optional	Priority Not Set	Optional	Desired	Essential	Desired	Desired
Work Orders and Work Order Management	General	Checklist Criteria for Repair - Create Work Order	Ability to define criteria indicating repair/adjustment or replacement is required on checklist items. Automatically create a work order to with the task or add a line item to work order if already created from this checklist.	Desired	Optional	Optional	Essential	Essential	Desired	Desired	Essential
Work Orders and Work Order Management	General	Multiple Shop / Work Locations	Accommodate multiple shops and work locations including ARRC shops and work in the field	Optional	Optional	Priority Not Set	Priority Not Set	Optional	Essential	Desired	Optional



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Feature Category	Feature	Req Name	Req Desc Asset Type	General	General	General	General	General	General	General	General
Work Orders and Work Order Management	General	Capture Usage Readings on Work Orders	Ability to capture the current usage readings (hours, miles, etc.) on work orders and PMs when they are opened	Essential	Desired	Priority Not Set	Priority Not Set	Optional	Essential	Desired	Optional
Work Orders and Work Order Management	General	Record Checklist and Results	Ability to capture and store checklist form and recorded data electronically (rather than paper or scanned paper) for a work order	Essential	Desired	Essential	Essential	Optional	Essential	Desired	Desired
Work Orders and Work Order Management	General	Work Packages	Ability to create pre-defined work order template with a standard set of tasks for a particular inspection, condition assessment, complaint, etc	Essential	Essential	Essential	Desired	Essential	Essential	Essential	Desired
Work Orders and Work Order Management	General	Assign Work Orders	Ability to assign work orders to technicians within the appropriate skillset pool and/or geographic location	Essential	Priority Not Set	Essential	Priority Not Set	Essential	Desired	Essential	Essential
Work Orders and Work Order Management	General	Categorize Costs (OPEX/CAPEX)	Ability to categorize costs by OPEX/CAPEX categories and subcategory (e.g. OPEX - Preventative (e.g. Inspection), Corrective, or Break-Fix (must fix now) and CAPEX (e.g. ARRC, Agency (if application) or Other (if applicable))	Desired	Essential	Desired	Desired	Essential	Essential	Desired	Desired
Work Orders and Work Order Management	General	Work Order Source	Ability to record the source of a work order (e.g. result of an inspection, end user request, operations observation, alarm/notification, or internally initiated)	Essential	Optional	Essential	Desired	Essential	Essential	Essential	Essential



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Feature Category	Feature	Req Name	Req Desc Asset Type	General	General	General	General	General	General	General
Work Orders and Work Order Management	General	Prioritization of Work Orders	Ability to prioritize or rank work orders; a default prioritization may be based on criticality rating of asset	Essential	Essential	Essential	Essential	Essential	Optional	Essential
Work Orders and Work Order Management	General	Reimbursable Work	Ability to indicate that work is reimbursable by another party and output can be prepared to support Finance	Optional	Essential	Desired	Desired	Essential	Optional	Optional
Work Orders and Work Order Management	General	Cost Accounting - Handling Changes	Ability to report or pass through changes to costs on a work order to the financial system so it is in sync with the work order costs.	Desired	Priority Not Set	Desired	Desired	Optional	Essential	Optional
Work Orders and Work Order Management	General	Integrate Financial System	Work Order system must be integrated or interfaced with the financial system (currently JDE)	Essential	Optional	Optional	Optional	Essential	Essential	Essential
Work Orders and Work Order Management	General	Work Orders against Assets in Hierarchy	Allow for a work order to be written against assets at various levels of the hierarchy	Essential	Essential	Essential	Essential	Desired	Optional	Optional
Work Orders and Work Order Management	General	Ease of Use	Focus on ease of use for recording work yet need the ability to record meaningful information to be useful (e.g. Task Coding)	Essential	Desired	Desired	Essential	Essential	Desired	Essential
Work Orders and Work Order Management	General	Group Work Orders by Geographic Area	Group work orders by geographic area so they do not need to be manually grouped for review and assignment	Desired	Optional	Desired	Desired	Essential	Desired	Essential
Work Orders and Work Order Management	General	Minor Work	Ability to quickly record minor work on a work order against an asset such as inspection and service (i.e. objective is to avoid using a standing or bucket work order that is not asset-specific for non-parts work less than 1 hour)	Essential	Optional	Desired	Desired	Essential	Desired	Desired



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Feature Category	Feature	Req Name	Req Desc Asset Type	General	General	General	General	General	General	General	General
Work Orders and Work Order Management	General	Contractor or Vendor Work	Ability to record work details (possibly through an import) performed by contractors or vendors on work orders	Essential	Priority Not Set	Optional	Desired	Optional	Essential	Desired	Desired
Work Orders and Work Order Management	General	Mechanic/Technician Records Work	Mechanic/Technician records their work on the work order and has access to info they need through the system. Only person with direct knowledge of work is Mechanic/Technician and they should be able to record their work as it is done.	Essential	Essential	Priority Not Set	Optional	Essential	Essential	Desired	Essential
Work Orders and Work Order Management	General	Parts on Work Order	Ability to specify parts on work order and whether they came from inventory, were ordered, or purchased with a purchasing card	Essential	Essential	Optional	Optional	Essential	Essential	Optional	Optional
Work Orders and Work Order Management	General	Failure Analysis	Improved ability to analyze failures and their causes. Currently can only rely on what has been written on the work orders; and its necessary to look at each individual work order.	Essential	Essential	Optional	Optional	Essential	Essential	Desired	Essential
Work Orders and Work Order Management	General	Reporting Tools	Base requirement are tools that are better than an Excel export. There is a need for analytics for trending, analysis, failure, and investment planning. Analytics may be in a separate tool but the information to support it must be reportable. Currently Excel is the reporting tool - either data is manually entered or exported from JDE	Desired	Essential	Desired	Desired	Essential	Essential	Essential	Essential



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Work Orders and Work Order Management	General	Estimated Effort on Work Orders	Ability to set an estimated labor or costs on work orders to aid in planning and scheduling or to provide estimates to end users	Desired	Optional	Optional	Desired	Essential	Desired	Optional
Materials Management	General	Equipment Check-Out / Check-In	Mechanism to check out and check in equipment (particularly portable equipment that may be issued to a user)	Desired	Priority Not Set	Priority Not Set	Optional	Desired	Optional	Optional
Materials Management	General	Material Inventory Field Locations	Ability to easily add and remove materials in arbitrary field locations identified with GPS (either by device or selection from map). Material locations correlated to asset hierarchy for reporting (e.g. Mile Post)	Desired	Priority Not Set	Essential	Desired	Desired	Optional	Desired
Materials Management	General	Component Parts - Obsolescence	Ability to identify date and category of obsolescence by vendor for asset or its component parts (e.g. vendor sends notice with date of end of support)	Desired	Optional	Priority Not Set	Optional	Essential	Essential	Optional
Materials Management	General	Component Parts - Criticality	Ability to designate as critical parts or components that have long lead times, are obsolete, or are costly or difficult to ship when needed	Desired	Desired	Optional	Optional	Essential	Essential	Desired
Materials Management	General	Min-Max Parts Inventory	Inventory minimum and maximum on-hand requirements that is based on asset and component mix; including when assets are added or surplus; and seasonal changes	Essential	Desired	Optional	Desired	Essential	Optional	Optional



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Feature Category	Feature	Req Name	Req Desc Asset Type	General	General	General	General	General	General	General	General
Materials Management	General	Inventory Purchase Plan	Purchase plan based on forecasted preventative and overhaul work (done manually now but should be able to forecast based on work packages / planned work orders in system)	Desired	Optional	Optional	Optional	Optional	Essential	Optional	Optional
Component Tracking and Rebuild	General	Component Serial Number Tracking	Ability to track components by serial number and when they were put on, taken off, moved to another asset or put on shelf (serial number of part not on unit could require component to be an "asset")	Essential	Priority Not Set	Desired	Optional	Desired	Desired	Optional	Desired
Component Tracking and Rebuild	General	Component Compatibility	Ability to identify compatibility of components with asset configurations	Desired	Priority Not Set	Desired	Optional	Optional	Desired	Optional	Optional
Component Tracking and Rebuild	General	Component Service Life	Ability to specify expected service life of a component or part	Essential	Desired	Optional	Desired	Essential	Desired	Optional	Optional
Component Tracking and Rebuild	General	Component Installation and Removal	Track when components are installed, removed, and their disposition (e.g. transferred, shelved, disposed of, rebuilt) May be differences in handling with components that have serial numbers vs those that do not.	Essential	Desired	Desired	Optional	Essential	Desired	Optional	Optional
Component Tracking and Rebuild	General	Part Rebuild	Indicator that a part in inventory or being installed is a rebuild	Desired	Priority Not Set	Optional	Optional	Optional	Desired	Optional	Optional
Component Tracking and Rebuild	General	Usage for Components	Calculated usage based on the usage measures for asset(s) installed in; for reliability and preventative maintenance	Desired	Essential	Optional	Optional	Optional	Essential	Optional	Optional



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Warranty Management	General	Warranty	Ability to specify for parts whether a serial number is expected, what warranty terms are, and whether it is from purchased or installed date. Associate warranty contact info or procedure with record (procedures vary by Vendor/OEM)	Essential	Priority Not Set	Optional	Optional	Optional	Essential	Optional
Capital Projects and Campaigns	General	Total Cost of Ownership Reporting	Method for recording and displaying TCO; what is spent to maintain assets and the frequency of maintenance versus replacement of the asset or systems within the asset; allow for long term planning of asset or system replacement	Essential	Essential	Optional	Desired	Optional	Essential	Optional
Capital Projects and Campaigns	General	Capital Projects Reporting	Improved reporting on capital projects including estimates for labor, P-Card purchases, etc. prior to posting in the finance system (perhaps estimated from Work Order entries) in addition to funding by year and by funding source	Essential	Essential	Optional	Essential	Essential	Essential	Optional
Capital Projects and Campaigns	General	Asset Category / Class Composition over Time	Ability to show the composition of assets in an asset category / class over time by asset hierarchy or groupings as well as ownership (e.g. ARRC, leased, rented)	Desired	Optional	Desired	Desired	Essential	Optional	Optional



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Capital Projects and Campaigns	General	Replacement Plan (ULB / Obsolescence)	For multi-year planning support replacement planning including age, useful life benchmark, obsolescence, costs, usage, and asset category composition (e.g. owned vs leased / rented)	Desired	Essential	Optional	Essential	Essential	Desired	Optional
Timekeeping	General	Hours of Service (HOS)	Ability to record Hours of Service and availability for work in a way which adheres and is approved by regulatory agencies	Desired	Optional	Optional	Essential	Priority Not Set	Priority Not Set	Desired
Timekeeping	General	Hours Worked on Work Order / Asset	Record hours worked on a work order (both direct and indirect time) and integrate with time keeping.	Desired	Desired	Desired	Essential	Essential	Desired	Essential
Timekeeping	General	Asset Field on Timecards	Have an asset field on time cards across ARRC to ensure that asset usage can be captured (usage is a more detailed level than what group the asset is assigned to)	Essential	Priority Not Set	Optional	Essential	Optional	Desired	Optional
Timekeeping	General	Time Tracking	Avoid duplicate entry or manipulation of time records in more than one system	Desired	Desired	Essential	Desired	Essential	Essential	Optional



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			Asset Class	General	Locomotive	Railcars	Track	Bridge	Signal	General	Buildings	General
Feature Category	Feature	Req Name	Req Desc Asset Type	General	General	General	General	General	General	General	General	General
Asset Hierarchy, Registry, and Info	Asset Data	Central System of Record	Objective is a central source of information including asset and work activity; acknowledging that specialized systems may be used (and possibly linked or integrated) for configuration, status, and notifications	24	3	3	3	3	3	3	3	3
Asset Hierarchy, Registry, and Info	Asset Data	Basic Asset Attributes	Ability to record basic asset data common to asset management systems including an ARRC unique identifier, year, make, model, serial number, color, etc.	21	3	3	3	3	3	3	2	1
Asset Hierarchy, Registry, and Info	Asset Data	NTD Reporting Attributes	Assets should have attributes that allow for direct or easy mapping for NTD reporting without the need to maintain separately in Excel.	17	3	3	3	2	1	2	2	1
Asset Hierarchy, Registry, and Info	Asset Data	Asset Data System Identifiers	Ability to support multiple external system identifiers for an asset if they differ from internal ARRC identifiers	21	3	3	3	1	3	3	2	3
Asset Hierarchy, Registry, and Info	Asset Data	Asset Data Integration	Ability to synchronize or integrate basic asset information with external vendors / systems minimize need to manually check and update records for accuracy.	16	3	3	3	1	1	3	1	1
Asset Hierarchy, Registry, and Info	Asset Data	Document Management and Linking	Support a centralized approach to storing and accessing asset-related documents including drawings, schedules, manuals, pictures, etc. for both digital and paper documents	23	3	2	3	3	3	3	3	3
Asset Hierarchy, Registry, and Info	Asset Data	Mobile Access to Documents	Ability to access digital documents outside of the office; if on mobile possibly allow offline mode by caching documents related to the assets	20	3	1	2	3	3	3	2	3



Reliability Matters

ARRC TAM Phase 2 Requirements Matrix

Color Coding

Essential (High Priority)
Desired (Medium Priority)
Optional (Low Priority)
Priority Not Set

Scored

			Asset Category	Overall	Rolling Stock	Rolling Stock	Fixed Guideway	Fixed Guideway	Fixed Guideway	Service Vehicles	Facilities	Communications
			Asset Class	General	Locomotive	Railcars	Track	Bridge	Signal	General	Buildings	General
Feature Category	Feature	Req Name	Req Desc Asset Type	General	General	General	General	General	General	General	General	General
Asset Hierarchy, Registry, and Info	Asset Data	Link (both ways) to GIS	Support hyperlinking from asset management system to GIS and from GIS to asset management	15	2	1	2	2	2	2	2	2
Asset Hierarchy, Registry, and Info	Asset Data	GPS/GIS Position Information (Fixed)	Ability to record GPS locations for GIS at the asset level; either from device or by selecting on map	16	3	0	2	2	3	1	2	3
Asset Hierarchy, Registry, and Info	Asset Data	Location by Mile Post	In addition to a named location and GPS / GIS coordinates support the location by ARRC Mile Post	18	3	0	3	3	3	1	2	3
Asset Hierarchy, Registry, and Info	Hierarchy	Asset Hierarchy	Model and enforce hierarchical relationships between assets; particularly parent-child	21	3	1	3	3	3	3	2	3
Asset Hierarchy, Registry, and Info	Hierarchy	Classes or Grouping of Assets	Organize and manage equipment as a class or group; useful for planned maintenance programs and reporting	19	3	3	1	3	2	3	2	2
Asset Hierarchy, Registry, and Info	Hierarchy	Components	Include components and sub-components, assemblies, systems and similar entities	17	3	2	3	2	2	2	2	1
Asset Availability and Status	Ownership	Ownership Status	Ability to indicate owner and any interested parties in the asset	15	3	1	1	3	1	3	1	2
Asset Availability and Status	Ownership	Owner Info	Contact information of the owner of assets; especially leased or rented equipment	18	3	1	1	3	3	3	1	3
Asset Availability and Status	Status	Condition Assessment - Risk	Support a risk / consequence assessment on assets (or their components); could be used for weighting condition assessment at higher level of hierarchy	16	3	1	2	3	2	1	2	2
Asset Availability and Status	Status	Status - Location	Asset location in as near real-time as it is possible to have the status changed by a system or person	9	3	0	0	1	2	1	1	1
Asset Availability and Status	Status	GPS/GIS Position Information (Mobile)	Utilize GPS not only for current but also historical data for assets that are mobile	10	2	0	0	1	1	3	1	2



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		Asset Category	Overall	Rolling Stock	Rolling Stock	Fixed Guideway	Fixed Guideway	Fixed Guideway	Service Vehicles	Facilities	Communications	
		Asset Class	General	Locomotive	Railcars	Track	Bridge	Signal	General	Buildings	General	
Feature Category	Feature	Req Name	Req Desc Asset Type	General	General	General	General	General	General	General	General	
Asset Availability and Status	Status	Asset Assignment	Ability to assign assets to a department with a start / end date that will also summarize usage from readings, PMs, and work orders (e.g. costs, fuel, miles, hours)	15	3	1	0	1	3	3	1	3
Asset Availability and Status	Status	Asset Rate and Usage Calculation	Support mechanism to calculate costs of asset and which groups used the asset during the period. This calculation may be an initial input to Finance for cost allocation.	11	3	1	0	1	1	3	1	1
Asset Availability and Status	Status	Condition Rating System	Support a condition rating system for assets (e.g. 1 to 5)	21	3	3	2	3	3	3	2	2
Asset Availability and Status	Status	Condition Assessment	Ability to record, store, and report periodic condition assessments with criteria guidance as well as previous ratings and work performed since the last assessment	23	3	3	3	3	3	3	2	3
Asset Availability and Status	Status	Import External Transaction Data	Ability to import transaction data from external systems (and when needed ability to enter that transaction manually)	13	3	1	0	1	1	3	2	2
Asset Availability and Status	Availability	Out of Service Coding and Duration	Capture out of service codes and time duration (e.g delay impacting operations, or no impact - may include status such as waiting for parts, shop space, labor, etc.); intent is to support reliability analysis and reporting	18	3	3	1	1	3	3	1	3
Asset Availability and Status	Availability	Availability Calculations	Show availability over time at asset and also at hierarchy (grouping of assets) levels. Differentiate between types of out of service (e.g. seasonal or intentionally stored)	20	3	3	3	1	3	3	1	3
Asset Availability and Status	Availability	Availability - Seasonal Variations	Ability to indicate seasonal status (e.g. open /closed, not being used, etc.)	11	2	2	2	1	1	1	1	1



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		Asset Category		Overall	Rolling Stock	Rolling Stock	Fixed Guideway	Fixed Guideway	Fixed Guideway	Service Vehicles	Facilities	Communications
		Asset Class		General	Locomotive	Railcars	Track	Bridge	Signal	General	Buildings	General
Feature Category	Feature	Req Name	Req Desc Asset Type	General	General	General	General	General	General	General	General	General
Configuration Management	General	Asset Model Configuration	Control over asset configuration design with ability to define rules for components and parts	12	3	2	2	0	1	2	1	1
Configuration Management	General	Change Management Process	Ability to have a change management process for components of the assets. May include things such as checklists, test procedures, review process, etc.	16	3	2	2	2	3	1	2	1
Configuration Management	General	Integration with Configuration Management Systems	Ability to integrate or synchronize data with external configuration management systems to avoid manual duplication or cross-checking of data.	13	3	0	1	0	3	3	2	1
Fault/Problem Detection	General	Capture Reasons for Failure	Ability to capture reason(s) for failure; preferably through standardized coding	17	3	0	2	1	3	3	2	3
Fault/Problem Detection	General	Data from Diagnostic Systems	Ability to hyperlink to or record and report on information from diagnostic systems and testing vendors	16	2	3	2	2	1	1	2	3
Fault/Problem Detection	General	Data from External Asset Management Systems	Ability to hyperlink to or compile information from external asset management systems including current state, alerts, and errors / issues	16	3	3	1	0	3	1	2	3
Planned Maintenance and Inspection	General	Common Inspection Record to Satisfy Multiple Agencies	Desire a means of managing asset and inspection information that can be used to satisfy multiple agency regulatory requirements (e.g. FRA and FTA)	19	3	3	3	3	3	1	2	1
Planned Maintenance and Inspection	General	Inspection Data Retention Periods	Ability to retain electronic copies of records indefinitely; Federal agencies usually allow for only a certain period of time	13	2	3	2	2	1	0	2	1



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Feature Category	Feature	Req Name	Asset Category Asset Class Asset Type Req Desc Asset Type	Overall	Rolling Stock	Rolling Stock	Fixed Guideway	Fixed Guideway	Fixed Guideway	Service Vehicles	Facilities	Communications
				General	Locomotive	Railcars	Track	Bridge	Signal	General	Buildings	General
				General	General	General	General	General	General	General	General	General
Planned Maintenance and Inspection	General	PM Notification	Ability for notifications to be automatically sent to maintenance and assigned user group when a PM is due (or created by the system)	13	2	2	2	0	1	3	2	1
Planned Maintenance and Inspection	General	Contractors for Preventative Maintenance	Ability to define vendors which are used for PM and inspection activities on assets, systems or components	10	2	2	0	2	1	1	1	1
Planned Maintenance and Inspection	General	Incorporate Season and Weather	Accommodate recording season and weather into usage information for preventative or predictive maintenance planning and	10	3	1	1	0	1	1	2	1
Work Orders and Work Order Management	General	Task Coding on Work Orders	Ability to code tasks on work orders that may include system, subsystem, component, position, and activity (e.g. inspect, install, remove, repair, replace) for accurate information on maintenance activity and costs	22	2	2	3	3	3	3	3	3
Work Orders and Work Order Management	General	Complaint / Cause / Correction (3C's)	Support the ability to record complaint, cause, and correction in a standardized way for more efficient failure analysis and identification of common issues, causes, and their resolution	18	3	1	0	3	3	3	2	3
Work Orders and Work Order Management	General	Mobile Digital Work Orders	Record data where and when the work occurs (create, update, and close) through mobile digital work orders that support an offline mode.	23	3	3	3	3	3	3	2	3
Work Orders and Work Order Management	General	SLAs for Response Times	Support the ability to set SLAs for response time on asset groups or categories and to record performance against them	13	2	1	0	1	2	3	2	2



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		Asset Category	Overall	Rolling Stock	Rolling Stock	Fixed Guideway	Fixed Guideway	Fixed Guideway	Service Vehicles	Facilities	Communications	
		Asset Class	General	Locomotive	Railcars	Track	Bridge	Signal	General	Buildings	General	
Feature Category	Feature	Req Name	Req Desc Asset Type	General	General	General	General	General	General	General	General	
Work Orders and Work Order Management	General	Checklist Criteria for Repair - Create Work Order	Ability to define criteria indicating repair/adjustment or replacement is required on checklist items. Automatically create a work order to with the task or add a line item to work order if already created from this checklist.	17	2	1	1	3	3	2	2	3
Work Orders and Work Order Management	General	Multiple Shop / Work Locations	Accommodate multiple shops and work locations including ARRC shops and work in the field	9	1	1	0	0	1	3	2	1
Work Orders and Work Order Management	General	Capture Usage Readings on Work Orders	Ability to capture the current usage readings (hours, miles, etc.) on work orders and PMs when they are opened	12	3	2	0	0	1	3	2	1
Work Orders and Work Order Management	General	Record Checklist and Results	Ability to capture and store checklist form and recorded data electronically (rather than paper or scanned paper) for a work order	19	3	2	3	3	1	3	2	2
Work Orders and Work Order Management	General	Work Packages	Ability to create pre-defined work order template with a standard set of tasks for a particular inspection, condition assesement, complaint, etc	22	3	3	3	2	3	3	3	2
Work Orders and Work Order Management	General	Assign Work Orders	Ability to assign work orders to technicians within the appropriate skillset pool and/or geographic location	17	3	0	3	0	3	2	3	3
Work Orders and Work Order Management	General	Categorize Costs (OPEX/CAPEX)	Ability to categorize costs by OPEX/CAPEX categories and subcategory (e.g. OPEX - Preventative (e.g. Inspection), Corrective, or Break-Fix (must fix now) and CAPEX (e.g. ARRC, Agency (if application) or Other (if applicable))	19	2	3	2	2	3	3	2	2



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		Asset Category	Overall	Rolling Stock	Rolling Stock	Fixed Guideway	Fixed Guideway	Fixed Guideway	Service Vehicles	Facilities	Communications
		Asset Class	General	Locomotive	Railcars	Track	Bridge	Signal	General	Buildings	General
Feature Category	Feature	Req Name	Req Desc Asset Type	General	General	General	General	General	General	General	General
Work Orders and Work Order Management	General	Work Order Source	Ability to record the source of a work order (e.g. result of an inspection, end user request, operations observation, alarm/notification, or internally initiated)	21	3	1	3	2	3	3	3
Work Orders and Work Order Management	General	Checklists (Digital)	Ability to define digital (not paper) checklists for condition assessments, inspections, or regular work activities connected to a work orders. Checklists save the results recorded by the user and are attached to work order and may be available from asset.	23	3	3	3	3	3	2	3
Work Orders and Work Order Management	General	Cost Reporting	Ability to see aggregate costs on assets by basic criteria including System, "Type", Time Period, PM, Corrective or Break-Fix, By OPEX/CAPEX (or funding source), by hierarchy or geography	17	2	3	2	3	2	2	1
Work Orders and Work Order Management	General	Record GPS Locations to Work Location	Ability to record GPS locations (from device itself or selection from a map) for work order locations	15	2	0	3	2	3	1	3
Work Orders and Work Order Management	General	End-Users and Work Orders	Ability for end users (e.g. Operations) to initiate work requests through a complaint process and to see status and history of work orders	20	3	3	0	2	3	3	3
Work Orders and Work Order Management	General	Custom Categorize Work Orders	Ability to categorize work orders in a custom way such as by campaign, program, or season. This may aid in grouping work as part of prioritization and scheduling.	18	3	0	2	3	3	2	2



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		Asset Category	Overall	Rolling Stock	Rolling Stock	Fixed Guideway	Fixed Guideway	Fixed Guideway	Service Vehicles	Facilities	Communications
		Asset Class	General	Locomotive	Railcars	Track	Bridge	Signal	General	Buildings	General
Feature Category	Feature	Req Name	Req Desc Asset Type	General	General	General	General	General	General	General	General
Work Orders and Work Order Management	General	Capture All Work on Work Orders	Ability to easily capture all work (inspection, condition assessment, work activity) on a work order to ensure that a record is made of the work and costs are captured consistently	24	3	3	3	3	3	3	3
Work Orders and Work Order Management	General	Prioritization of Work Orders	Ability to prioritize or rank work orders; a default prioritization may be based on criticality rating of asset	22	3	3	3	3	3	1	3
Work Orders and Work Order Management	General	Reimbursable Work	Ability to indicate that work is reimbursable by another party and output can be prepared to support Finance	14	1	3	2	2	3	1	1
Work Orders and Work Order Management	General	Cost Accounting - Handling Changes	Ability to report or pass through changes to costs on a work order to the financial system so it is in sync with the work order costs.	14	2	0	2	2	1	3	3
Work Orders and Work Order Management	General	Integrate Financial System	Work Order system must be integrated or interfaced with the financial system (currently JDE)	18	3	1	1	3	1	3	3
Work Orders and Work Order Management	General	Work Orders against Assets in Hierarchy	Allow for a work order to be written against assets at various levels of the hierarchy	19	3	3	3	3	2	3	1
Work Orders and Work Order Management	General	Ease of Use	Focus on ease of use for recording work yet need the ability to record meaningful information to be useful (e.g. Task Coding)	21	3	2	2	3	3	3	2
Work Orders and Work Order Management	General	Group Work Orders by Geographic Area	Group work orders by geographic area so they do not need to be manually grouped for review and assignment	17	2	1	2	2	3	2	2
Work Orders and Work Order Management	General	Minor Work	Ability to quickly record minor work on a work order against an asset such as inspection and service (i.e. objective is to avoid using a standing or bucket work order that is not asset-specific for non-parts work less than 1 hour)	17	3	1	2	2	3	2	2



Reliability Matters

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		Asset Category		Overall	Rolling Stock	Rolling Stock	Fixed Guideway	Fixed Guideway	Fixed Guideway	Service Vehicles	Facilities	Communications
		Asset Class		General	Locomotive	Railcars	Track	Bridge	Signal	General	Buildings	General
Feature Category	Feature	Req Name	Req Desc Asset Type	General	General	General	General	General	General	General	General	General
Work Orders and Work Order Management	General	Contractor or Vendor Work	Ability to record work details (possibly through an import) performed by contractors or vendors on work orders	14	3	0	1	2	1	3	2	2
Work Orders and Work Order Management	General	Mechanic/Technician Records Work	Mechanic/Technician records their work on the work order and has access to info they need through the system. Only person with direct knowledge of work is Mechanic/Technician and they should be able to record their work as it is done.	18	3	3	0	1	3	3	2	3
Work Orders and Work Order Management	General	Parts on Work Order	Ability to specify parts on work order and whether they came from inventory, were ordered, or purchased with a purchasing card	16	3	3	1	1	3	3	1	1
Work Orders and Work Order Management	General	Failure Analysis	Improved ability to analyze failures and their causes. Currently can only rely on what has been written on the work orders; and its necessary to look at each individual work order.	19	3	3	1	1	3	3	2	3
Work Orders and Work Order Management	General	Reporting Tools	Base requirement are tools that are better than an Excel export. There is a need for analytics for trending, analysis, failure, and investment planning. Analytics may be in a separate tool but the information to support it must be reportable. Currently Excel is the reporting tool - either data is manually entered or exported from JDE	21	2	3	2	2	3	3	3	3
Work Orders and Work Order Management	General	Work Order Notifications	Ability to configure notifications for new or outstanding work including PM, inspection, or work orders to designated users (e.g. on being created or assigned)	19	3	1	2	2	3	2	3	3



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		Asset Category		Overall	Rolling Stock	Rolling Stock	Fixed Guideway	Fixed Guideway	Fixed Guideway	Service Vehicles	Facilities	Communications
		Asset Class		General	Locomotive	Railcars	Track	Bridge	Signal	General	Buildings	General
Feature Category	Feature	Req Name	Req Desc Asset Type	General	General	General	General	General	General	General	General	General
Work Orders and Work Order Management	General	Usage Readings	Ability to quickly record (or import from external systems) usage readings (e.g. miles, hours)	11	3	0	0	1	1	3	2	1
Work Orders and Work Order Management	General	End-User Field Service	Ability for end users to quickly record any field service performed (for efficiency and consistency likely requires a digital mobile offline solution)	14	3	2	2	0	1	3	2	1
Work Orders and Work Order Management	General	Work Order Attachments	Automatically output, link, and/or display (if digital) procedures, checklists, and bills of materials needed for work order	20	3	1	2	3	3	3	3	2
Work Orders and Work Order Management	General	Future and Unscheduled Work Orders	Support the ability to have unscheduled or future date work orders to record work and have it available for scheduling	20	3	1	3	3	3	3	2	2
Work Orders and Work Order Management	General	Reassign, Split, or Child Work Order	Ability to reassign, split off part of a work order, or create a child work order so that more than one group can record activity against a work order yet still maintain the link to the single event	16	2	0	2	1	3	3	2	3
Work Orders and Work Order Management	General	Scheduling and Planning	Ability to plan and schedule work within the system rather than having to track outside of it (e.g. Excel)	23	3	3	3	3	3	2	3	3
Work Orders and Work Order Management	General	Estimated Effort on Work Orders	Ability to set an estimated labor or costs on work orders to aid in planning and scheduling or to provide estimates to end users	13	2	1	1	2	3	2	1	1
Materials Management	General	Equipment Check-Out / Check-In	Mechanism to check out and check in equipment (particularly portable equipment that may be issued to a user)	8	2	0	0	1	1	2	1	1



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		Asset Category	Overall	Rolling Stock	Rolling Stock	Fixed Guideway	Fixed Guideway	Fixed Guideway	Service Vehicles	Facilities	Communications	
		Asset Class	General	Locomotive	Railcars	Track	Bridge	Signal	General	Buildings	General	
Feature Category	Feature	Req Name	Req Desc Asset Type	General	General	General	General	General	General	General	General	
Materials Management	General	Material Inventory Field Locations	Ability to easily add and remove materials in arbitrary field locations identified with GPS (either by device or selection from map). Material locations correlated to asset hierarchy for reporting (e.g. Mile Post)	13	2	0	3	2	1	2	1	2
Materials Management	General	Component Parts - Obsolescence	Ability to identify date and category of obsolescence by vendor for asset or its component parts (e.g. vendor sends notice with date of end of support)	12	2	1	0	1	3	3	1	1
Materials Management	General	Component Parts - Criticality	Ability to designate as critical parts or components that have long lead times, are obsolete, or are costly or difficult to ship when needed	15	2	2	1	1	3	3	1	2
Materials Management	General	Min-Max Parts Inventory	Inventory minimum and maximum on-hand requirements that is based on asset and component mix; including when assets are added or surplus; and seasonal changes	15	3	2	1	2	2	3	1	1
Materials Management	General	Inventory Purchase Plan	Purchase plan based on forecasted preventative and overhaul work (done manually now but should be able to forecast based on work packages / planned work orders in system)	11	2	1	1	1	1	3	1	1
Component Tracking and Rebuild	General	Component Serial Number Tracking	Ability to track components by serial number and when they were put on, taken off, moved to another asset or put on shelf (serial number of part not on unit could require component to be an "asset")	13	3	0	2	1	2	2	1	2
Component Tracking and Rebuild	General	Component Compatibility	Ability to identify compatibility of components with asset configurations	10	2	0	2	1	1	2	1	1



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		Asset Category	Overall	Rolling Stock	Rolling Stock	Fixed Guideway	Fixed Guideway	Fixed Guideway	Service Vehicles	Facilities	Communications	
		Asset Class	General	Locomotive	Railcars	Track	Bridge	Signal	General	Buildings	General	
Feature Category	Feature	Req Name	Req Desc Asset Type	General	General	General	General	General	General	General	General	
Component Tracking and Rebuild	General	Component Service Life	Ability to specify expected service life of a component or part	15	3	2	1	2	3	2	1	1
Component Tracking and Rebuild	General	Component Installation and Removal	Track when components are installed, removed, and their disposition (e.g. transferred, shelved, disposed of, rebuilt) May be differences in handling with components that have serial numbers vs those that do not.	15	3	2	2	1	3	2	1	1
Component Tracking and Rebuild	General	Part Rebuild	Indicator that a part in inventory or being installed is a rebuild	9	2	0	1	1	1	2	1	1
Component Tracking and Rebuild	General	Usage for Components	Calculated usage based on the usage measures for asset(s) installed in; for reliability and preventative maintenance	13	2	3	1	1	1	3	1	1
Warranty Management	General	Warranty	Ability to specify for parts whether a serial number is expected, what warranty terms are, and whether it is from purchased or installed date. Associate warranty contact info or procedure with record (procedures vary by Vendor/OEM)	11	3	0	1	1	1	3	1	1
Capital Projects and Campaigns	General	Total Cost of Ownership Reporting	Method for recording and displaying TCO; what is spent to maintain assets and the frequency of maintenance versus replacement of the asset or systems within the asset; allow for long term planning of asset or system replacement	15	3	3	1	2	1	1	3	1



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		Asset Category	Overall	Rolling Stock	Rolling Stock	Fixed Guideway	Fixed Guideway	Fixed Guideway	Service Vehicles	Facilities	Communications	
		Asset Class	General	Locomotive	Railcars	Track	Bridge	Signal	General	Buildings	General	
Feature Category	Feature	Req Name	Req Desc Asset Type	General	General	General	General	General	General	General	General	
Capital Projects and Campaigns	General	Capital Projects Reporting	Improved reporting on capital projects including estimates for labor, P-Card purchases, etc. prior to posting in the finance system (perhaps estimated from Work Order entries) in addition to funding by year and by funding source	20	3	3	1	3	3	3	3	1
Capital Projects and Campaigns	General	Asset Category / Class Composition over Time	Ability to show the composition of assets in an asset category / class over time by asset hierarchy or groupings as well as ownership (e.g. ARRC, leased, rented)	13	2	1	2	2	1	3	1	1
Capital Projects and Campaigns	General	Replacement Plan (ULB / Obsolescence)	For multi-year planning support replacement planning including age, useful life benchmark, obsolescence, costs, usage, and asset category composition (e.g. owned vs leased / rented)	17	2	3	1	3	3	2	2	1
Timekeeping	General	Hours of Service (HOS)	Ability to record Hours of Service and availability for work in a way which adheres and is approved by regulatory agencies	9	2	1	1	0	3	0	0	2
Timekeeping	General	Hours Worked on Work Order / Asset	Record hours worked on a work order (both direct and indirect time) and integrate with time keeping.	20	2	2	2	3	3	3	2	3
Timekeeping	General	Asset Field on Timecards	Have an asset field on time cards across ARRC to ensure that asset usage can be captured (usage is a more detailed level than what group the asset is assigned to)	13	3	0	1	3	1	2	2	1
Timekeeping	General	Time Tracking	Avoid duplicate entry or manipulation of time records in more than one system	19	2	2	3	2	3	3	3	1



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Asset Hierarchy

			Asset Category	Overall	Rolling Stock	Rolling Stock	Fixed Guideway	Fixed Guideway	Fixed Guideway	Service Vehicles	Facilities	Communications
			Asset Class	General	Locomotive	Railcars	Track	Bridge	Signal	General	Buildings	General
Feature Category	Feature	Req Name	Req Desc Asset Type	General	General	General	General	General	General	General	General	General
Asset Hierarchy, Registry, and Info	Asset Data	Central System of Record	Objective is a central source of information including asset and work activity; acknowledging that specialized systems may be used (and possibly linked or integrated) for configuration, status, and notifications	24	3	3	3	3	3	3	3	3
Asset Hierarchy, Registry, and Info	Asset Data	Document Management and Linking	Support a centralized approach to storing and accessing asset-related documents including drawings, schedules, manuals, pictures, etc. for both digital and paper documents	23	3	2	3	3	3	3	3	3
Asset Hierarchy, Registry, and Info	Asset Data	Basic Asset Attributes	Ability to record basic asset data common to asset management systems including an ARRC unique identifier, year, make, model, serial number, color, etc.	21	3	3	3	3	3	3	2	1
Asset Hierarchy, Registry, and Info	Asset Data	Asset Data System Identifiers	Ability to support multiple external system identifiers for an asset if they differ from internal ARRC identifiers	21	3	3	3	1	3	3	2	3
Asset Hierarchy, Registry, and Info	Hierarchy	Asset Hierarchy	Model and enforce hierarchical relationships between assets; particularly parent-child	21	3	1	3	3	3	3	2	3
Asset Hierarchy, Registry, and Info	Asset Data	Mobile Access to Documents	Ability to access digital documents outside of the office; if on mobile possibly allow offline mode by caching documents related to the assets	20	3	1	2	3	3	3	2	3
Asset Hierarchy, Registry, and Info	Hierarchy	Classes or Grouping of Assets	Organize and manage equipment as a class or group; useful for planned maintenance programs and reporting	19	3	3	1	3	2	3	2	2



Reliability Matters

ARRC TAM Phase 2 Requirements Matrix

Color Coding

Essential (High Priority)
Desired (Medium Priority)
Optional (Low Priority)
Priority Not Set

Asset Hierarchy

		Asset Category	Overall	Rolling Stock	Rolling Stock	Fixed Guideway	Fixed Guideway	Fixed Guideway	Service Vehicles	Facilities	Communications	
		Asset Class	General	Locomotive	Railcars	Track	Bridge	Signal	General	Buildings	General	
Feature Category	Feature	Req Name	Req Desc Asset Type	General	General	General	General	General	General	General	General	
Asset Hierarchy, Registry, and Info	Asset Data	Location by Mile Post	In addition to a named location and GPS / GIS coordinates support the location by ARRC Mile Post	18	3	0	3	3	3	1	2	3
Asset Hierarchy, Registry, and Info	Asset Data	NTD Reporting Attributes	Assets should have attributes that allow for direct or easy mapping for NTD reporting without the need to maintain separately in Excel.	17	3	3	3	2	1	2	2	1
Asset Hierarchy, Registry, and Info	Hierarchy	Components	Include components and sub-components, assemblies, systems and similar entities	17	3	2	3	2	2	2	2	1
Asset Hierarchy, Registry, and Info	Asset Data	Asset Data Integration	Ability to synchronize or integrate basic asset information with external vendors / systems minimize need to manually check and update records for accuracy.	16	3	3	3	1	1	3	1	1
Asset Hierarchy, Registry, and Info	Asset Data	GPS/GIS Position Information (Fixed)	Ability to record GPS locations for GIS at the asset level; either from device or by selecting on map	16	3	0	2	2	3	1	2	3
Asset Hierarchy, Registry, and Info	Asset Data	Link (both ways) to GIS	Support hyperlinking from asset management system to GIS and from GIS to asset management	15	2	1	2	2	2	2	2	2



Reliability Matters

ARRC TAM Phase 2 Requirements Matrix

Color Coding

Essential (High Priority)
Desired (Medium Priority)
Optional (Low Priority)
Priority Not Set

Availability

		Asset Category	Overall	Rolling Stock	Rolling Stock	Fixed Guideway	Fixed Guideway	Fixed Guideway	Service Vehicles	Facilities	Communications
		Asset Class	General	Locomotive	Railcars	Track	Bridge	Signal	General	Buildings	General
Feature Category	Feature	Req Name	Req Desc Asset Type	General	General	General	General	General	General	General	General
Asset Availability and Status	Status	Condition Assessment	Ability to record, store, and report periodic condition assessments with criteria guidance as well as previous ratings and work performed	23	3	3	3	3	3	2	3
Asset Availability and Status	Status	Condition Rating System	Support a condition rating system for assets (e.g. 1 to 5)	21	3	3	2	3	3	2	2
Asset Availability and Status	Availability	Availability Calculations	Show availability over time at asset and also at hierarchy (grouping of assets) levels. Differentiate between types of out of service (e.g. seasonal or intentionally stored)	20	3	3	3	1	3	1	3
Asset Availability and Status	Ownership	Owner Info	Contact information of the owner of assets; especially leased or rented equipment	18	3	1	1	3	3	1	3
Asset Availability and Status	Availability	Out of Service Coding and Duration	Capture out of service codes and time duration (e.g. delay impacting operations, or no impact - may include status such as waiting for parts, shop space, labor, etc.); intent is to support reliability analysis and reporting	18	3	3	1	1	3	1	3
Asset Availability and Status	Status	Condition Assessment - Risk	Support a risk / consequence assessment on assets (or their components); could be used for weighting condition assessment at higher level of hierarchy	16	3	1	2	3	2	1	2
Asset Availability and Status	Ownership	Ownership Status	Ability to indicate owner and any interested parties in the asset	15	3	1	1	3	1	3	2
Asset Availability and Status	Status	Asset Assignment	Ability to assign assets to a department with a start / end date that will also summarize usage from readings, PMs, and work orders (e.g. costs, fuel, miles, hours)	15	3	1	0	1	3	3	1



Reliability Matters

ARRC TAM Phase 2 Requirements Matrix

Color Coding

Essential (High Priority)
Desired (Medium Priority)
Optional (Low Priority)
Priority Not Set

Availability

		Asset Category	Overall	Rolling Stock	Rolling Stock	Fixed Guideway	Fixed Guideway	Fixed Guideway	Service Vehicles	Facilities	Communications	
		Asset Class	General	Locomotive	Railcars	Track	Bridge	Signal	General	Buildings	General	
Feature Category	Feature	Req Name	Req Desc Asset Type	General	General	General	General	General	General	General	General	
Asset Availability and Status	Status	Import External Transaction Data	Ability to import transaction data from external systems (and when needed ability to enter that transaction manually)	13	3	1	0	1	1	3	2	2
Asset Availability and Status	Status	Asset Rate and Usage Calculation	Support mechanism to calculate costs of asset and which groups used the asset during the period. This calculation may be an initial input to Finance for cost allocation.	11	3	1	0	1	1	3	1	1
Asset Availability and Status	Availability	Availability - Seasonal Variations	Ability to indicate seasonal status (e.g. open /closed, not being used, etc.)	11	2	2	2	1	1	1	1	1
Asset Availability and Status	Status	GPS/GIS Position Information (Mobile)	Utilize GPS not only for current but also historical data for assets that are mobile	10	2	0	0	1	1	3	1	2
Asset Availability and Status	Status	Status - Location	Asset location in as near real-time as it is possible to have the status changed by a system or person	9	3	0	0	1	2	1	1	1



Reliability Matters

ARRC TAM Phase 2 Requirements Matrix

Color Coding

Essential (High Priority)
Desired (Medium Priority)
Optional (Low Priority)
Priority Not Set

Configuration

			Asset Category	Overall	Rolling Stock	Rolling Stock	Fixed Guideway	Fixed Guideway	Fixed Guideway	Service Vehicles	Facilities	Communications
			Asset Class	General	Locomotive	Railcars	Track	Bridge	Signal	General	Buildings	General
Feature Category	Feature	Req Name	Req Desc Asset Type	General	General	General	General	General	General	General	General	General
Configuration Management	General	Change Management Process	Ability to have a change management process for components of the assets. May include things such as checklists, test procedures, review process, etc.	16	3	2	2	2	3	1	2	1
Configuration Management	General	Integration with Configuration Management Systems	Ability to integrate or synchronize data with external configuration management systems to avoid manual duplication or cross-checking of data.	13	3	0	1	0	3	3	2	1
Configuration Management	General	Asset Model Configuration	Control over asset configuration design with ability to define rules for components and parts	12	3	2	2	0	1	2	1	1



Reliability Matters

ARRC TAM Phase 2 Requirements Matrix

Color Coding

Essential (High Priority)
Desired (Medium Priority)
Optional (Low Priority)
Priority Not Set

Fault/Problem Detection

			Asset Category	Overall	Rolling Stock	Rolling Stock	Fixed Guideway	Fixed Guideway	Fixed Guideway	Service Vehicles	Facilities	Communications
			Asset Class	General	Locomotive	Railcars	Track	Bridge	Signal	General	Buildings	General
Feature Category	Feature	Req Name	Req Desc Asset Type	General	General	General	General	General	General	General	General	General
Fault/Problem Detection	General	Capture Reasons for Failure	Ability to capture reason(s) for failure; preferably through standardized coding	17	3	0	2	1	3	3	2	3
Fault/Problem Detection	General	Data from Diagnostic Systems	Ability to hyperlink to or record and report on information from diagnostic systems and testing vendors	16	2	3	2	2	1	1	2	3
Fault/Problem Detection	General	Data from External Asset Management Systems	Ability to hyperlink to or compile information from external asset management systems including current state, alerts, and errors / issues	16	3	3	1	0	3	1	2	3



Reliability Matters

ARRC TAM Phase 2 Requirements Matrix

Color Coding

Essential (High Priority)
Desired (Medium Priority)
Optional (Low Priority)
Priority Not Set

Planned Maintenance

		Asset Category	Overall	Rolling Stock	Rolling Stock	Fixed Guideway	Fixed Guideway	Fixed Guideway	Service Vehicles	Facilities	Communications
		Asset Class	General	Locomotive	Railcars	Track	Bridge	Signal	General	Buildings	General
Feature Category	Feature	Req Name	Req Desc Asset Type	General	General	General	General	General	General	General	General
Planned Maintenance and Inspection	General	Generate Work Orders from Inspection Results	Ability to generate work orders from inspection results (would typically be categorized as corrective actions)	24	3	3	3	3	3	3	3
Planned Maintenance and Inspection	General	Inspection Schedules	Support ability to schedule recurring inspections that will automatically create a work order	23	3	2	3	3	3	3	3
Planned Maintenance and Inspection	General	Digital-First Inspections	Ability to record inspections digitally in the field (with an offline mode available); subject to any regulatory requirements and workflow requirements	22	3	3	3	3	3	2	2
Planned Maintenance and Inspection	General	Common Inspection Record to Satisfy Multiple Agencies	Desire a means of managing asset and inspection information that can be used to satisfy multiple agency regulatory requirements (e.g. FRA and FTA)	19	3	3	3	3	1	2	1
Planned Maintenance and Inspection	General	Automated Compliance Tracking and Planning	Automated planning and compliance tracking of regulatory inspection requirements	19	3	3	3	3	1	3	2
Planned Maintenance and Inspection	General	Digital Workflows for Review and Approval	Support digital workflows for review and approval for inspections (and where otherwise required) that is consistent with any regulatory workflow requirements	15	2	1	3	3	1	1	2
Planned Maintenance and Inspection	General	PM Service Calculation	Ability to calculate PM service requirements on more than one aspect of asset usage (e.g. calendar time, hours, miles, fuel usage, etc.)	15	3	3	1	0	1	3	3
Planned Maintenance and Inspection	General	PM Job Plan	Ability to setup standard template for labor and parts for preventative maintenance routines to allow for forecasting of parts and labor needed	15	2	2	2	2	1	2	3



Reliability Matters

ARRC TAM Phase 2 Requirements Matrix

Color Coding

Essential (High Priority)
Desired (Medium Priority)
Optional (Low Priority)
Priority Not Set

Planned Maintenance

		Asset Category	Overall	Rolling Stock	Rolling Stock	Fixed Guideway	Fixed Guideway	Fixed Guideway	Service Vehicles	Facilities	Communications	
		Asset Class	General	Locomotive	Railcars	Track	Bridge	Signal	General	Buildings	General	
Feature Category	Feature	Req Name	Req Desc Asset Type	General	General	General	General	General	General	General	General	
Planned Maintenance and Inspection	General	Pre-Use and Frequent Inspection Checklists	Ability to record frequent (daily) or pre-use inspections with a checklist; support different checklists based on asset category and characteristics	14	3	3	0	0	1	3	2	2
Planned Maintenance and Inspection	General	Inspection Data Retention Periods	Ability to retain electronic copies of records indefinitely; Federal agencies usually allow for only a certain period of time	13	2	3	2	2	1	0	2	1
Planned Maintenance and Inspection	General	PM Notification	Ability for notifications to be automatically sent to maintenance and assigned user group when a PM is due (or created by the system)	13	2	2	2	0	1	3	2	1
Planned Maintenance and Inspection	General	Contractors for Preventative Maintenance	Ability to define vendors which are used for PM and inspection activities on assets, systems or components	10	2	2	0	2	1	1	1	1
Planned Maintenance and Inspection	General	Incorporate Season and Weather	Accommodate recording season and weather into usage information for preventative or predictive maintenance planning and	10	3	1	1	0	1	1	2	1



Reliability Matters

ARRC TAM Phase 2 Requirements Matrix

Color Coding

Essential (High Priority)
Desired (Medium Priority)
Optional (Low Priority)
Priority Not Set

Work Orders

		Asset Category		Overall	Rolling Stock	Rolling Stock	Fixed Guideway	Fixed Guideway	Fixed Guideway	Service Vehicles	Facilities	Communications
		Asset Class		General	Locomotive	Railcars	Track	Bridge	Signal	General	Buildings	General
Feature Category	Feature	Req Name	Req Desc Asset Type	General	General	General	General	General	General	General	General	General
Work Orders and Work Order Management	General	Capture All Work on Work Orders	Ability to easily capture all work (inspection, condition assessment, work activity) on a work order to ensure that a record is made of the work and costs are captured consistently	24	3	3	3	3	3	3	3	3
Work Orders and Work Order Management	General	Mobile Digital Work Orders	Record data where and when the work occurs (create, update, and close) through mobile digital work orders that support an offline mode.	23	3	3	3	3	3	3	2	3
Work Orders and Work Order Management	General	Checklists (Digital)	Ability to define digital (not paper) checklists for condition assessments, inspections, or regular work activities connected to a work orders. Checklists save the results recorded by the user and are attached to work order and may be available from asset.	23	3	3	3	3	3	3	2	3
Work Orders and Work Order Management	General	Scheduling and Planning	Ability to plan and schedule work within the system rather than having to track outside of it (e.g. Excel)	23	3	3	3	3	3	2	3	3
Work Orders and Work Order Management	General	Task Coding on Work Orders	Ability to code tasks on work orders that may include system, subsystem, component, position, and activity (e.g. inspect, install, remove, repair, replace) for accurate information on maintenance activity and costs	22	2	2	3	3	3	3	3	3
Work Orders and Work Order Management	General	Work Packages	Ability to create pre-defined work order template with a standard set of tasks for a particular inspection, condition assessment, complaint, etc	22	3	3	3	2	3	3	3	2



Reliability Matters

ARRC TAM Phase 2 Requirements Matrix

Color Coding

Essential (High Priority)
Desired (Medium Priority)
Optional (Low Priority)
Priority Not Set

Work Orders

		Asset Category	Overall	Rolling Stock	Rolling Stock	Fixed Guideway	Fixed Guideway	Fixed Guideway	Service Vehicles	Facilities	Communications	
		Asset Class	General	Locomotive	Railcars	Track	Bridge	Signal	General	Buildings	General	
Feature Category	Feature	Req Name	Req Desc Asset Type	General	General	General	General	General	General	General	General	
Work Orders and Work Order Management	General	Prioritization of Work Orders	Ability to prioritize or rank work orders; a default prioritization may be based on criticality rating of asset	22	3	3	3	3	3	3	1	3
Work Orders and Work Order Management	General	Work Order Source	Ability to record the source of a work order (e.g. result of an inspection, end user request, operations observation, alarm/notification, or internally initiated)	21	3	1	3	2	3	3	3	3
Work Orders and Work Order Management	General	Ease of Use	Focus on ease of use for recording work yet need the ability to record meaningful information to be useful (e.g. Task Coding)	21	3	2	2	3	3	3	2	3
Work Orders and Work Order Management	General	Reporting Tools	Base requirement are tools that are better than an Excel export. There is a need for analytics for trending, analysis, failure, and investment planning. Analytics may be in a separate tool but the information to support it must be reportable. Currently Excel is the reporting tool - either data is manually entered or exported from JDE	21	2	3	2	2	3	3	3	3
Work Orders and Work Order Management	General	End-Users and Work Orders	Ability for end users (e.g. Operations) to initiate work requests through a complaint process and to see status and history of work orders	20	3	3	0	2	3	3	3	3
Work Orders and Work Order Management	General	Work Order Attachments	Automatically output, link, and/or display (if digital) procedures, checklists, and bills of materials needed for work order	20	3	1	2	3	3	3	3	2
Work Orders and Work Order Management	General	Future and Unscheduled Work Orders	Support the ability to have unscheduled or future date work orders to record work and have it available for scheduling	20	3	1	3	3	3	3	2	2



Reliability Matters

ARRC TAM Phase 2 Requirements Matrix

Color Coding

Essential (High Priority)
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Optional (Low Priority)
Priority Not Set

Work Orders

		Asset Category	Overall	Rolling Stock	Rolling Stock	Fixed Guideway	Fixed Guideway	Fixed Guideway	Service Vehicles	Facilities	Communications	
		Asset Class	General	Locomotive	Railcars	Track	Bridge	Signal	General	Buildings	General	
Feature Category	Feature	Req Name	Req Desc Asset Type	General	General	General	General	General	General	General	General	
Work Orders and Work Order Management	General	Record Checklist and Results	Ability to capture and store checklist form and recorded data electronically (rather than paper or scanned paper) for a work order	19	3	2	3	3	1	3	2	2
Work Orders and Work Order Management	General	Categorize Costs (OPEX/CAPEX)	Ability to categorize costs by OPEX/CAPEX categories and subcategory (e.g. OPEX - Preventative (e.g. Inspection), Corrective, or Break-Fix (must fix now) and CAPEX (e.g. ARRC, Agency (if applicable) or Other (if applicable))	19	2	3	2	2	3	3	2	2
Work Orders and Work Order Management	General	Work Orders against Assets in Hierarchy	Allow for a work order to be written against assets at various levels of the hierarchy	19	3	3	3	3	2	3	1	1
Work Orders and Work Order Management	General	Failure Analysis	Improved ability to analyze failures and their causes. Currently can only rely on what has been written on the work orders; and its necessary to look at each individual work order.	19	3	3	1	1	3	3	2	3
Work Orders and Work Order Management	General	Work Order Notifications	Ability to configure notifications for new or outstanding work including PM, inspection, or work orders to designated users (e.g. on being created or assigned)	19	3	1	2	2	3	2	3	3
Work Orders and Work Order Management	General	Complaint / Cause / Correction (3C's)	Support the ability to record complaint, cause, and correction in a standardized way for more efficient failure analysis and identification of common issues, causes, and their resolution	18	3	1	0	3	3	3	2	3
Work Orders and Work Order Management	General	Custom Categorize Work Orders	Ability to categorize work orders in a custom way such as by campaign, program, or season. This may aid in grouping work as part of prioritization and scheduling.	18	3	0	2	3	3	3	2	2



Reliability Matters

ARRC TAM Phase 2 Requirements Matrix

Color Coding

Essential (High Priority)
Desired (Medium Priority)
Optional (Low Priority)
Priority Not Set

Work Orders

		Asset Category	Overall	Rolling Stock	Rolling Stock	Fixed Guideway	Fixed Guideway	Fixed Guideway	Service Vehicles	Facilities	Communications	
		Asset Class	General	Locomotive	Railcars	Track	Bridge	Signal	General	Buildings	General	
Feature Category	Feature	Req Name	Req Desc Asset Type	General	General	General	General	General	General	General	General	
Work Orders and Work Order Management	General	Integrate Financial System	Work Order system must be integrated or interfaced with the financial system (currently JDE)	18	3	1	1	3	1	3	3	3
Work Orders and Work Order Management	General	Mechanic/Technician Records Work	Mechanic/Technician records their work on the work order and has access to info they need through the system. Only person with direct knowledge of work is Mechanic/Technician and they should be able to record their work as it is done.	18	3	3	0	1	3	3	2	3
Work Orders and Work Order Management	General	Checklist Criteria for Repair - Create Work Order	Ability to define criteria indicating repair/adjustment or replacement is required on checklist items. Automatically create a work order to with the task or add a line item to work order if already created from this checklist.	17	2	1	1	3	3	2	2	3
Work Orders and Work Order Management	General	Assign Work Orders	Ability to assign work orders to technicians within the appropriate skillset pool and/or geographic location	17	3	0	3	0	3	2	3	3
Work Orders and Work Order Management	General	Cost Reporting	Ability to see aggregate costs on assets by basic criteria including System, "Type", Time Period, PM, Corrective or Break-Fix, By OPEX/CAPEX (or funding source), by hierarchy or geography	17	2	3	2	3	2	2	2	1
Work Orders and Work Order Management	General	Group Work Orders by Geographic Area	Group work orders by geographic area so they do not need to be manually grouped for review and assignment	17	2	1	2	2	3	2	2	3



Reliability Matters

ARRC TAM Phase 2 Requirements Matrix

Color Coding

Essential (High Priority)
Desired (Medium Priority)
Optional (Low Priority)
Priority Not Set

Work Orders

		Asset Category		Overall	Rolling Stock	Rolling Stock	Fixed Guideway	Fixed Guideway	Fixed Guideway	Service Vehicles	Facilities	Communications
		Asset Class		General	Locomotive	Railcars	Track	Bridge	Signal	General	Buildings	General
Feature Category	Feature	Req Name	Req Desc Asset Type	General	General	General	General	General	General	General	General	General
Work Orders and Work Order Management	General	Minor Work	Ability to quickly record minor work on a work order against an asset such as inspection and service (i.e. objective is to avoid using a standing or bucket work order that is not asset-specific for non-parts work less than 1 hour)	17	3	1	2	2	3	2	2	2
Work Orders and Work Order Management	General	Parts on Work Order	Ability to specify parts on work order and whether they came from inventory, were ordered, or purchased with a purchasing card	16	3	3	1	1	3	3	1	1
Work Orders and Work Order Management	General	Reassign, Split, or Child Work Order	Ability to reassign, split off part of a work order, or create a child work order so that more than one group can record activity against a work order yet still maintain the link to the single event	16	2	0	2	1	3	3	2	3
Work Orders and Work Order Management	General	Record GPS Locations to Work Location	Ability to record GPS locations (from device itself or selection from a map) for work order locations	15	2	0	3	2	3	1	1	3
Work Orders and Work Order Management	General	Cost Accounting - Handling Changes	Ability to report or pass through changes to costs on a work order to the financial system so it is in sync with the work order costs.	14	2	0	2	2	1	3	3	1
Work Orders and Work Order Management	General	Contractor or Vendor Work	Ability to record work details (possibly through an import) performed by contractors or vendors on work orders	14	3	0	1	2	1	3	2	2
Work Orders and Work Order Management	General	End-User Field Service	Ability for end users to quickly record any field service performed (for efficiency and consistency likely requires a digital mobile offline solution)	14	3	2	2	0	1	3	2	1
Work Orders and Work Order Management	General	SLAs for Response Times	Support the ability to set SLAs for response time on asset groups or categories and to record performance against them	13	2	1	0	1	2	3	2	2



Reliability Matters

ARRC TAM Phase 2 Requirements Matrix

Color Coding

Essential (High Priority)
Desired (Medium Priority)
Optional (Low Priority)
Priority Not Set

Work Orders

		Asset Category		Overall	Rolling Stock	Rolling Stock	Fixed Guideway	Fixed Guideway	Fixed Guideway	Service Vehicles	Facilities	Communications
		Asset Class		General	Locomotive	Railcars	Track	Bridge	Signal	General	Buildings	General
Feature Category	Feature	Req Name	Req Desc Asset Type	General	General	General	General	General	General	General	General	General
Work Orders and Work Order Management	General	Reimbursable Work	Ability to indicate that work is reimbursable by another party and output can be prepared to support Finance	13	1	2	2	2	3	1	1	1
Work Orders and Work Order Management	General	Estimated Effort on Work Orders	Ability to set an estimated labor or costs on work orders to aid in planning and scheduling or to provide estimates to end users	13	2	1	1	2	3	2	1	1
Work Orders and Work Order Management	General	Capture Usage Readings on Work Orders	Ability to capture the current usage readings (hours, miles, etc.) on work orders and PMs when they are opened	12	3	2	0	0	1	3	2	1
Work Orders and Work Order Management	General	Usage Readings	Ability to quickly record (or import from external systems) usage readings (e.g. miles, hours)	11	3	0	0	1	1	3	2	1
Work Orders and Work Order Management	General	Multiple Shop / Work Locations	Accommodate multiple shops and work locations including ARRC shops and work in the field	9	1	1	0	0	1	3	2	1



Reliability Matters

ARRC TAM Phase 2
Requirements Matrix

Color Coding

Essential (High Priority)
Desired (Medium Priority)
Optional (Low Priority)
Priority Not Set

Materials Management

		Asset Category	Overall	Rolling Stock	Rolling Stock	Fixed Guideway	Fixed Guideway	Fixed Guideway	Service Vehicles	Facilities	Communications	
		Asset Class	General	Locomotive	Railcars	Track	Bridge	Signal	General	Buildings	General	
Feature Category	Feature	Req Name	Req Desc Asset Type	General	General	General	General	General	General	General	General	
Materials Management	General	Component Parts - Criticality	Ability to designate as critical parts or components that have long lead times, are obsolete, or are costly or difficult to ship when needed	15	2	2	1	1	3	3	1	2
Materials Management	General	Min-Max Parts Inventory	Inventory minimum and maximum on-hand requirements that is based on asset and component mix; including when assets are added or surplus; and seasonal changes	15	3	2	1	2	2	3	1	1
Materials Management	General	Material Inventory Field Locations	Ability to easily add and remove materials in arbitrary field locations identified with GPS (either by device or selection from map). Material locations correlated to asset hierarchy for reporting (e.g. Mile Post)	13	2	0	3	2	1	2	1	2
Materials Management	General	Component Parts - Obsolescence	Ability to identify date and category of obsolescence by vendor for asset or its component parts (e.g. vendor sends notice with date of end of support)	12	2	1	0	1	3	3	1	1
Materials Management	General	Inventory Purchase Plan	Purchase plan based on forecasted preventative and overhaul work (done manually now but should be able to forecast based on work packages / planned work orders in system)	11	2	1	1	1	1	3	1	1
Materials Management	General	Equipment Check-Out / Check-In	Mechanism to check out and check in equipment (particularly portable equipment that may be issued to a user)	8	2	0	0	1	1	2	1	1



Reliability Matters

ARRC TAM Phase 2 Requirements Matrix

Color Coding

Essential (High Priority)
Desired (Medium Priority)
Optional (Low Priority)
Priority Not Set

Component Tracking

		Asset Category	Overall	Rolling Stock	Rolling Stock	Fixed Guideway	Fixed Guideway	Fixed Guideway	Service Vehicles	Facilities	Communications	
		Asset Class	General	Locomotive	Railcars	Track	Bridge	Signal	General	Buildings	General	
Feature Category	Feature	Req Name	Req Desc Asset Type	General	General	General	General	General	General	General	General	
Component Tracking and Rebuild	General	Component Service Life	Ability to specify expected service life of a component or part	15	3	2	1	2	3	2	1	1
Component Tracking and Rebuild	General	Component Installation and Removal	Track when components are installed, removed, and their disposition (e.g. transferred, shelved, disposed of, rebuilt) May be differences in handling with components that have serial numbers vs those that do not.	15	3	2	2	1	3	2	1	1
Component Tracking and Rebuild	General	Component Serial Number Tracking	Ability to track components by serial number and when they were put on, taken off, moved to another asset or put on shelf (serial number of part not on unit could require component to be an "asset")	13	3	0	2	1	2	2	1	2
Component Tracking and Rebuild	General	Usage for Components	Calculated usage based on the usage measures for asset(s) installed in; for reliability and preventative maintenance	13	2	3	1	1	1	3	1	1
Component Tracking and Rebuild	General	Component Compatibility	Ability to identify compatibility of components with asset configurations	10	2	0	2	1	1	2	1	1
Component Tracking and Rebuild	General	Part Rebuild	Indicator that a part in inventory or being installed is a rebuild	9	2	0	1	1	1	2	1	1



Reliability Matters

ARRC TAM Phase 2 Requirements Matrix

Warranty Management

Color Coding

Essential (High Priority)
Desired (Medium Priority)
Optional (Low Priority)
Priority Not Set

Feature Category	Feature	Req Name	Asset Category	Overall	Rolling Stock	Rolling Stock	Fixed Guideway	Fixed Guideway	Fixed Guideway	Service Vehicles	Facilities	Communications
			Asset Class	General	Locomotive	Railcars	Track	Bridge	Signal	General	Buildings	General
			Req Desc Asset Type	General	General	General	General	General	General	General	General	General
Warranty Management	General	Warranty	Ability to specify for parts whether a serial number is expected, what warranty terms are, and whether it is from purchased or installed date. Associate warranty contact info or procedure with record (procedures vary by Vendor/OEM)	11	3	0	1	1	1	3	1	1



Reliability Matters

ARRC TAM Phase 2 Requirements Matrix

Color Coding

Essential (High Priority)
Desired (Medium Priority)
Optional (Low Priority)
Priority Not Set

Capital Projects

		Asset Category	Overall	Rolling Stock	Rolling Stock	Fixed Guideway	Fixed Guideway	Fixed Guideway	Service Vehicles	Facilities	Communications	
		Asset Class	General	Locomotive	Railcars	Track	Bridge	Signal	General	Buildings	General	
Feature Category	Feature	Req Name	Req Desc Asset Type	General	General	General	General	General	General	General	General	
Capital Projects and Campaigns	General	Capital Projects Reporting	Improved reporting on capital projects including estimates for labor, P-Card purchases, etc. prior to posting in the finance system (perhaps estimated from Work Order entries) in addition to funding by year and by funding source	20	3	3	1	3	3	3	3	1
Capital Projects and Campaigns	General	Replacement Plan (ULB / Obsolescence)	For multi-year planning support replacement planning including age, useful life benchmark, obsolescence, costs, usage, and asset category composition (e.g. owned vs leased / rented)	17	2	3	1	3	3	2	2	1
Capital Projects and Campaigns	General	Total Cost of Ownership Reporting	Method for recording and displaying TCO; what is spent to maintain assets and the frequency of maintenance versus replacement of the asset or systems within the asset; allow for long term	15	3	3	1	2	1	1	3	1
Capital Projects and Campaigns	General	Asset Category / Class Composition over Time	Ability to show the composition of assets in an asset category / class over time by asset hierarchy or groupings as well as ownership (e.g. ARRC, leased, rented)	13	2	1	2	2	1	3	1	1



Reliability Matters

ARRC TAM Phase 2 Requirements Matrix

Color Coding

Essential (High Priority)
Desired (Medium Priority)
Optional (Low Priority)
Priority Not Set

Timekeeping

		Asset Category	Overall	Rolling Stock	Rolling Stock	Fixed Guideway	Fixed Guideway	Fixed Guideway	Service Vehicles	Facilities	Communications	
		Asset Class	General	Locomotive	Railcars	Track	Bridge	Signal	General	Buildings	General	
Feature Category	Feature	Req Name	Req Desc Asset Type	General	General	General	General	General	General	General	General	
Timekeeping	General	Hours Worked on Work Order / Asset	Record hours worked on a work order (both direct and indirect time) and integrate with time keeping.	20	2	2	2	3	3	3	2	3
Timekeeping	General	Time Tracking	Avoid duplicate entry or manipulation of time records in more than one system	19	2	2	3	2	3	3	3	1
Timekeeping	General	Asset Field on Timecards	Have an asset field on time cards across ARRC to ensure that asset usage can be captured (usage is a more detailed level than what group the asset is assigned to)	13	3	0	1	3	1	2	2	1
Timekeeping	General	Hours of Service (HOS)	Ability to record Hours of Service and availability for work in a way which adheres and is approved	9	2	1	1	0	3	0	0	2