

Color Coding

Essential (High Priority)

Desired (Medium Priority)

Optional (Low Priority)

Priority Not Set

	Width		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	General
Asset Hierarchy,	Asset Data	Central System of	Objective is a central								
Registry, and Info		Record	source of information								
			including asset and wor	k							
			activity; acknowledging								
			that specialized systems	;							
			may be used (and								
			possibly linked or								
			integrated) for								
			configuration, status,								
			and notifications								
Asset Hierarchy,	Asset Data	Basic Asset Attributes	Ability to record basic								
Registry, and Info			asset data common to								
			asset management								
			systems including an								
			ARRC unique identifier,								
			year, make, model, seria	al							
			number, color, etc.								
Asset Hierarchy,	Asset Data	NTD Reporting	Assets should have							_	
Registry, and Info		Attributes	attributes that allow for								
			direct or easy mapping								
			for NTD reporting								
			without the need to								
			maintain separately in								
			Excel.								
Asset Hierarchy,	Asset Data	Asset Data System	Ability to support								
Registry, and Info		Identifiers	multiple external systen	า							
			identifiers for an asset it	f							
			they differ from internal								
			ARRC identifiers								
Asset Hierarchy,	Asset Data	Asset Data Integration	Ability to synchronize or								
Registry, and Info			integrate basic asset								
			information with								
			external vendors /								
			systems minimize need								
			to manually check and update records for								
			·								
Asset Hierarchy,	Asset Data	Document Managemen	accuracy. Support a centralized								
Registry, and Info	Asset Data	and Linking	approach to storing and								
negistry, and into		una Emallig	accessing asset-related								
			-								
			documents including drawings, schedules, manuals, pictures, etc.for both digital and paper documents								



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			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	General
Asset Hierarchy,	Asset Data	Mobile Access to	Ability to access digital								
Registry, and Info		Documents	documents outside of								
			the office; if on mobile								
			possibly allow offline								
			mode by caching								
			documents related to								
			the assets								
Asset Hierarchy,	Asset Data	Link (both ways) to GIS	Support hyperlinking								
Registry, and Info			from asset management								
			system to GIS and from								
			GIS to asset								
Accet Hierarchy	Assat Data	CDC/CIC Desition	management								
Asset Hierarchy,	Asset Data	GPS/GIS Position	Ability to record GPS								
Registry, and Info		Information (Fixed)	locations for GIS at the								
			asset level; either from device or by selecting on								
			map								
Asset Hierarchy,	Asset Data	Location by Mile Post	In addition to a named								
Registry, and Info	7.55Ct Data	Location by Wine 1 ost	location and GPS / GIS								
inegisti y, una imo			coordinates support the								
			location by ARRC Mile								
			Post								
Asset Hierarchy,	Hierarchy	Asset Hierarchy	Model and enforce								
Registry, and Info			hierarchical relationships	s							
			between assets;								
			particulary parent-child								
Asset Hierarchy,	Hierarchy	Classes or Grouping of	Organize and manage								
Registry, and Info		Assets	equipment as a class or								
			group; useful for								
			planned maintenance								
A a a a table a serve made o	I II a u a u a la	Commonto	programs and reporting				_				
Asset Hierarchy,	Hierarchy	Components	Include components and								
Registry, and Info			sub-components,								
			assemblies, systems and								
Asset Availability and	Ownership	Ownership Status	similar entities Ability to indicate owner								
Status	Ownership	Owner strip status	and any interested								
Status			parties in the asset								
			parties in the asset								
Asset Availability and	Ownership	Owner Info	Contact information of								
Status	5		the owner of assets;								
			especially leased or								
			rented equipment								



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			Asset Class		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	Condition Assessment -	Support a risk /								
Status		Risk	consequence								
			assessment on assets (or								
			their components);								
			could be used for								
			weighting condition								
			assessment at higher								
			level of hierarchy								
Asset Availability and	Status	Status - Location	Asset location in as near								
Status			real-time as it is possible								
			to have the status								
			changed by a system or								
Assat Availability and	Ctatus	GPS/GIS Position	person								
Asset Availability and	Status		Utilize GPS not only for								
Status		Information (Mobile)	current but also historical data for assets								
			that are mobile								
Asset Availability and	Status	Asset Assignment	Ability to assign assets to								
Status	Status	Asset Assignment	a department with a								
Status			start / end date that will								
			also summarize usage								
			from readings, PMs, and								
			work orders (e.g. costs,								
			fuel, miles, hours)								
Asset Availability and	Status	Asset Rate and Usage	Support mechanism to								
Status		Calculation	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.								
Asset Availability and	Status	Condition Rating System									
Status			rating system for assets								
			(e.g. 1 to 5)								
Asset Availability and	Status	Condition Assessment	Ability to record, store,								
Status			and report periodic								
			condition assessments								
			with criteria guidance as								
			well as previous ratings								
			and work performed								
			since the last								
Asset Availability and	Status	Import External	assessment Ability to import								
·	Status	Import External Transaction Data	Ability to import transaction data from								
Status		Transaction Data	external systems (and								
			when needed ability to								
			enter that transaction								
			manually)								
			manadily								



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			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	General
Asset Availability and	Availability	Out of Service Coding	Capture out of service								
Status		and Duration	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								
			reliablity analysis and								
			reporting								
Asset Availability and	Availability	Availability Calculations	Show availablity over								
Status	Availability	Availability Calculations	time at asset and also at								
Status			hierarchy (grouping of								
			assets) levels.								
			Differentiate between								
			types of out of service								
			(e.g. seasonal or								
			intentionally stored)								
Asset Availability and	Availability	Availability - Seasonal	Ability to indicate								
Status		Variations	seasonal status (e.g.								
			open /closed, not being								
			used, etc.)								
Configuration	General	Asset Model	Control over asset								
Management		Configuration	configuration design								
			with ability to define								
			rules for components								
			and parts								
Configuration	General		Ability to have a change								
Management		Process	management process for								
			components of the								
			assets. May include								
			things such as checklists,								
			test procedures, review process, etc.								
			process, etc.								
Configuration	General	Integration with	Ability to integrate or								
Management		Configuration	synchronize data with								
		Management Systems	external configuration								
			management systems to								
			avoid manual								
			duplication or cross-								
			checking of data.								
Fault/Problem Detectio	n General		Ability to capture								
		Failure	reason(s) for failure;								
			preferably through								
			standardized coding								



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	IVIATRIX		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
Fault/Problem Detection		Data from Diagnostic	Ability to hyperlink to o		General	General	General	General	General	General	- Centerul
	. Concra	Systems	record and report on								
		Systems	information from								
			diagnostic systems and								
			testing vendors								
Fault/Problem Detection	General	Data from External Asse	et Ability to hyperlink to o	r							
daily i robiciii Detection	General	Management Systems	complile information	'							
		Wanagement Systems	from external asset								
			management systems								
			including current state,								
			alerts, and errors /								
			issues								
Planned Maintenance	General	Common Inspection	Desire a means of								
and Inspection	General	Record to Satisfy	managing asset and								
and inspection		Multiple Agencies	inspection information								
		Wuitiple Agencies	that can be used to								
			satisfy muliple agency								
			regulatory requirement								
			(e.g. FRA and FTA)	5							
Planned Maintenance	General	Inspection Data	Ability to retain								
and Inspection	General	Retention Periods	electronic copieds of								
and inspection		Retention Ferious	records indefinitely;								
			Federal agencies usuall								
			allow for only a certain								
			period of time								
Planned Maintenance	General	Digital Workflows for	Support digital								_
	General	Review and Approval	workflows for review								
and Inspection		Review and Approval									
			and approval for inspections (and where								
			otherwise required) that is consistent with any								
			regulatory workflow								
			requirements								
Planned Maintenance	General	Pre-Use and Frequent	Ability to record								
	General	Inspection Checklists	I								
and Inspection		inspection checklists	frequent (daily) or pre- use inspections with a								
			checklist; support								
			different checklists								
			based on asset categor	,							
				/							
Planned Maintenance	General	Digital-First Inspections	and characteristics Ability to record								
	General	Digital-First inspections									
and Inspection			inspections digitally in the field (with an offline								
			mode available); subject								
			to any regulatory								
			requirements and								
			workflow requirements								



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Buildings General	General General



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Optional (Low Priority)

Priority Not Set

IVIG	itrix		Assat Catagory	Dalling Stock	Dalling Charle	Fixed Guideway	Fixed Guideway	Fixed Guideway	Comice Vehicles	Facilities	Communications
			Asset Category Asset Class	Rolling Stock Locomotive	Rolling Stock Railcars	Track	Bridge	Signal	Service Vehicles General	Buildings	General
Feature Category Feat	ture Req N	lame	Req Desc Asset Type	General	General	General	General	General	General	General	General
Work Orders and Work Gen			Ability to code tasks on	General	General	General	General	General	General	General	General
Order Management	Order		work orders that may								
oraci management	0.46.		include system,								
			subsystem, component,								
			position, and activity								
			(e.g. inspect, install,								
			remove, repair, replace)								
			for accurate information								
			on maintenance activity								
			and costs								
Work Orders and Work Gen	neral Comp	plaint / Cause /	Support the ability to								
Order Management			record complaint, cause,								
			and correction in a								
			standardized way for								
			more efficient failure								
			analysis and								
			identification of								
			common issues, causes,								
			and their resolution								
Work Orders and Work Gen			Record data where and								
Order Management	Order		when the work occurs								
			(create, update, and								
			close) through mobile digital work orders that								
			support an offline mode.								
			Support an online mode.								
Work Orders and Work Gen	neral SLAs f		Support the ability to set								
Order Management			SLAs for response time								
			on asset groups or								
			categories and to record								
			performance against								
Work Orders and Work Gen	oral Chack		Ability to define criteria								
Order Management		r - Create Work	indicating								
Order Wanagement	Order		repair/adjustment or								
	Oraci		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								
Manie Ondana s 1114 - 1	and selection		checklist.								
Work Orders and Work Gen	l .		Accommodate multiple								
Order Management	Locati		shops and work locations including ARRC								
			shops and work in the								
			field								
			1								



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Optional (Low Priority)

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		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	General
Work Orders and Work General	Capture Usage Readings	Ability to capture the								
Order Management	on Work Orders	current usage readings								
		(hours, miles, etc.) on								
		work orders and PMs								
		when they are opened								
Work Orders and Work General	Record Checklist and	Ability to capture and								
Order Management	Results	store checklist form and								
		recorded data								
		electronically (rather								
		than paper or scanned								
		paper) for a work order								
Work Orders and Work General	Work Packages	Ability to create pre-								
Order Management		defined work order								
		template with a standard	t l							
		set of tasks for a								
		particular inspection,								
		condition assessement,								
		complaint, etc								
Work Orders and Work General	Assign Work Orders	Ability to assign work								
Order Management		orders to technicians								
		within the appropriate								
		skillset pool and/or								
		geographic location								
Work Orders and Work General	Categorize Costs	Abililty to categorize								
Order Management	(OPEX/CAPEX)	costs by OPEX/CAPEX								
		categories and								
		subcatgory (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)								
Work Orders and Work General	Work Order Source	Ability to record the								
Order Management		source of a work order								
		(e.g. result of an								
		inspection, end user								
		request, operations								
		observation,								
		alarm/notification, or								
		internally initiated)								



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optional (Low Priority) Priority Not Set

IVIALTIX		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
Work Orders and Work General	Checklists (Digital)	Ability to define digital								
Order Management		(not paper) checklists for	or							
		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.								
Work Orders and Work General	Cost Reporting	Ability to see aggreggat								
Order Management		costs on assets by basic								
		criteria including Syster	n,							
		"Type", Time Period,								
		PM, Corrective or Break								
		Fix, By OPEX/CAPEX (or								
		funding source), by								
		hierarchy or geography								
Work Orders and Work General	Record GPS Locations to									
Order Management	Work Location	locations (from device								
		itself or selection from	9							
		map) for work order								
Work Orders and Work General	End-Users and Work	locations Ability for end users (e.			_					
Order Management	Orders	Operations) to initiate	3.							
Order Management	Orders	work requests through								
		complaint process and	u							
		to see status and histor	v							
		of work orders	'							
Work Orders and Work General	Custom Categorize Worl									
Order Management	Orders	work orders in a custon								
		way such as by								
		campaign, program, or								
		season. This may aid in								
		grouping work as part of prioritization and								
		scheduling.								
Work Orders and Work General	Capture All Work on	Ability to easily capture								
Order Management	Work Orders	all work (inspection,								
		condition assessment,								
		work activity) on a worl	(
		order to ensure that a								
		record is made of the								
		work and costs are								
		captured consistently								



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		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	General
Work Orders and Work General	Prioritization of Work	Ability to prioritze or								
Order Management	Orders	rank work orders; a								
		default prioritzation may								
		be based on criticality								
		rating of asset								
Work Orders and Work General	Reimbursable Work	Ability to indicate that								
Order Management		work is reimbursable by								
		another party and								
		output can be prepared								
		to support Finance								
Work Orders and Work General	Cost Accounting -	Ability to report or pass								
Order Management	Handling Changes	through changes to costs	S .							
		on a work order to the								
		financial system so it is								
		in sync with the work								
		order costs.								
Work Orders and Work General	Integrate Financial	Work Order system must	t en							
Order Management	System	be integrated or								
		interfaced with the								
		financial system								
		(currently JDE)								
Work Orders and Work General	Work Orders against	Allow for a work order								
Order Management	Assets in Hierarchy	to be written against								
		assets at various levels								
		of the hierarchy								
Work Orders and Work General	Ease of Use	Focus on ease of use for								
Order Management		recording work yet need								
		the ability to record								
		meaningful information								
		to be useful (e.g. Task								
		Coding)								
Work Orders and Work General	Group Work Orders by	Group work orders by								
Order Management	Geographic Area	geographic area so they								
		do not need to be								
		manually grouped for								
W. J. O. J J. W. J. C J	NATA - ANALA - I	review and assignment		_						
Work Orders and Work Order Management General	Minor Work	Ability to quickly record minor work on a work								
Order Management										
		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)								



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			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 F	- eature	Req Name	Req Desc Asset Type	General	General	General	General	General	General	General	General
Work Orders and Work	General	Contractor or Vendor	Ability to record work								
Order Management		Work	details (possibly through								
			an import) performed by								
			contractors or vendors								
			on work orders								
Work Orders and Work	General	Mechanic/Technican	Mechanic/Technician								
Order Management		Records Work	records their work on								
			the work order and has								
			access to info they need								
			thrugh 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.								
Work Orders and Work	General	Parts on Work Order	Ability to specify parts								
Order Management			on work order and								
			whether they came from								
			inventory, were ordered,								
			or purchaed with a								
			purchasing card								
Work Orders and Work	General	Failure Analysis	Improved ability to								
Order Management			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.								
Work Orders and Work	General	Reporting Tools	Base requirement are								
Order Management			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								



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			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	General
Work Orders and Work	General	Work Order Notification									
Order Management			notifications for new or								
			outstanding work								
			including PM, inspection	1,							
			or work orders to								
			designated users (e.g. or	1							
			being created or								
Work Orders and Work	Gonoral	Usage Readings	assigned) Ability to quickly record								
Order Management	General	Usage Readings	(or import from externa								
Order Management			systems) usage readings								
			(e.g. miles, hours)								
			(e.g. rimes, riours)								
Work Orders and Work	General	End-User Field Service	Ability for end users to								
Order Management			quickly record any field								
			service performed (for								
			efficiency and								
			consistency likely								
			requires a digital mobile								
			offline solution)								
Work Orders and Work	General	Work Order Attachment									
Order Management			link, and/or display (if								
			digital) procedures, checklists, and bills of								
			materials needed for								
			work order								
Work Orders and Work	General	Future and Unscheduled									
Order Management		Work Orders	have unscheduled or								
			future date work orders								
			to record work and have	<u> </u>							
			it available for								
			scheduling								
Work Orders and Work	General	Reassign, Split, or Child	Ability to reassign, split								
Order Management		Work Order	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								
Work Orders and Work	General	Scheduling and Planning									
Order Management	Jeneral	Seriessing and Falling	schedule work within th	e							
2.30. management			system rather than								
			having to track outside								
			of it (e.g. Excel)								



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		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	The state of the s	General	General	General	General	General	General	General	General
Work Orders and Work General	Estimated Effort on	Ability to set an								
Order Management	Work Orders	estimated labor or costs								
		on work orders to aid in								
		planning and scheduling								
		or to provide estimates								
		to end users								
Materials Management General	Equipment Check-Out /	Mechanism to check out								
	Check-In	and check in equipment								
		(particularly portable								
		equipment that may be								
		issued to a user)								
Materials Management General		Ability to easily add and								
	Locations	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)								
Materials Management General	Component Parts -	Ability to identify date								
	Obsolescence	and category of								
		obsolescence by vendor								
		for asset or its								
		component parts (e.g.								
		vendor sends notice with								
		date of end of support)								
Materials Management General	Component Parts -	Ability to designate as								
Waterials Wallagement General	Criticality	critical parts or								
	Criticality	components that have								
		long lead times, are								
		obsolete, or are costly or								
		difficult to ship when								
		needed								
Materials Management General	Min-Max Parts Inventory	Inventory minimum and								
Jane Harris	in in in an area in territory	maximum on-hand								
		requirements that is								
		based on asset and								
		component mix;								
		including when assets								
		are added or surplused;								
		and seasonal changes								
		and scasonal changes								



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		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	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)								
Component Tracking and General	Component Serial	Ability to track								
Rebuild	Number Tracking	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")								
Component Tracking and General	Component	Ability to identify								
Rebuild	Compatibility	compatibility of								
		components with asset								
		configurations								
Component Tracking and General	Component Service Life	1								
Rebuild		expected service life of a								
		component or part								
Component Tracking and General	Component Installation	Track when components								
Rebuild	and Removal	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.								
Component Tracking and Conoral	Part Robuild	Indicator that a nart in								
Component Tracking and General	Part Rebuild	Indicator that a part in								
Rebuild		inventory or being								
Component Tracking and General	Usago for Company	installed is a rebuild								
	Usage for Components	Calculated usage based								
Rebuild		on the usage measures								
		for asset(s) installed in;								
		for reliablity and								
		preventative								
		maintenance								



Color Coding

Essential (High Priority)

Desired (Medium Priority)

Optional (Low Priority)

Priority Not Set

			Asset Category	Rolling Stock		Fixed Guideway	Fixed Guideway			Facilities	Communications
			Asset Class	Locomotive	Railcars	Track	Bridge	Signal	General	Buildings	General
Feature Category	Feature	Req Name		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 purchaed or								
			installed date. Associate								
			warranty contact info or								
			procedure with record								
			(procedures vary by								
			Vendor/OEM)								
Capital Projects and	General	Total Cost of Ownership	Method for recording								
Campaigns	Gerieran	Reporting	and displaying TCO;								
- Carripaigns			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								
Capital Projects and	General	Capital Projects	Improved reporting on								
Campaigns		Reporting	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								
Capital Projects and	General	Asset Category / Class	Ability to show the								
Campaigns		Composition over Time	composition of assets in								
1 0 -			an asset category / class								
			over time by asset								
			hierarchy or groupings								
			as well as ownership								
			(e.g. ARRC, leased,								
			rented)								



Color Coding

Essential (High Priority)

Desired (Medium Priority)

Optional (Low Priority)

Priority Not Set

			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		General	General	General	General	General	General	General	General
Capital Projects and	General	Replacement Plan (ULB /	For multi-year planning								
Campaigns		Obsolescence)	support replacement								
			planning including age,								
			useful life benchmark,								
			obsolescence, costs,								
			usage, and asset								
			category composition								
			(e.g. owned vs leased /								
			rented)								
Timekeeping	General	Hours of Service (HOS)	Ability to record Hours								
			of Service and availablity								
			for work in a way which								
			adheres and is approved								
			by regulatory agencies								
Timekeeping	General	Hours Worked on Work	Record hours worked								
Ппекееріп	General	Order / Asset	on a work order (both								
			direct and indirect time)								
			and integrate with time								
			keeping.								
Timekeeping	General	Asset Field on Timecards								_	
Timekeeping	General		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)								
			line asset is assigned to								
Timekeeping	General	Time Tracking	Avoid duplicate entry								
			or manipulation of time								
			records in more than								
			one system								



Reliability Matters

Scored

Color Coding

Desired (Medium Prior	i
Optional (Low Priority)	
Priority Not Set	

	Scorea		Asset Category	Overall	Rolling Stock	Rolling Stock	Fixed Guideway	Fixed Guideway	Fixed Guideway	Service Vehicles	Facilities	Communications
			Asset Class	General	Locomotive		Track	Bridge	Signal	General	Buildings	General
	Feature	Req Name		General	General	General	General	General	General	General	General	General
Asset Hierarchy, Registry, and Info	Asset Data	Central System of Record	source of information including asset and work activity; acknowledging that specialized systems	24	3	3	3	3	3	3	3	3
			may be used (and possibly linked or integrated) for configuration, status, and notifications									
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		NTD Reporting Attributes	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		3	3	3	1	3	3	2	3
Asset Hierarchy, Registry, and Info		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		and Linking	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

Color Coding

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

	300100		Asset Category	Overall	Rolling Stock	Rolling Stock	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; particulary 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	d 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 assessmen 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 historica data for assets that are mobile	al 10	2	0	0	1	1	3	1	2



Color Coding

Essential (High Priority)

Desired (Medium Priority)

Optional (Low Priority)

Priority Not Set

			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 Availability and Status	Status		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,	15	3	1	0	1	3	3	1	3
Asset Availability and Status	Status	Asset Rate and Usage Calculation	fuel, miles, hours) 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		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 reliablity analysis and reporting	18	3	3	1	1	3	3	1	3
Asset Availability and Status	Availability	Availability Calculations	Show availablity 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		Ability to indicate seasonal status (e.g. open /closed, not being used, etc.)	11	2	2	2	1	1	1	1	1



Color Coding

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

			Asset Category	Overall	Rolling Stock	Rolling Stock	Fixed Guideway	Fixed Guideway		Service Vehicles	Facilities	Communications
			Asset Class	General	Locomotive	Railcars	Track	Bridge	Signal	General	Buildings	General
<u> </u>	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 wit ability to define rules for components and parts		3	2	2	0	1	2	1	1
Configuration Management	General	Change Management Process	Ability to have a change management process fo 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.		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 complile information from external asset management systems including current state, alerts, and errors / issue	16	3	3	1	0	3	1	2	3
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 muliple 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 copieds of records indefinitely; Federal agencies usually allow for only a certain period of time	13	2	3	2	2	1	0	2	1



Color Coding

Desired (Medium Priority) Priority Not Set

			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
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		2	1	3	3	1	1	2	2
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	Digital-First Inspections	Ability to record inspections digitally in the field (with an offline mode available); subject to any regulatory requirements and workflow requirements		3	3	3	3	3	3	2	2
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	3
Planned Maintenance and Inspection	General	PM Service Calculation	Ability to calculate PM serivce requirements on more than one aspect of asset usage (e.g. calendar time, hours, miles, fuel usage, etc.)		3	3	1	0	1	3	3	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	1
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		2	2	2	2	1	2	3	1
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	3



Reliability Matters

Color Coding

Desired (Medium Priority) Priority Not Set

			Asset Category		Rolling Stock					Service Vehicles	Facilities	Communications
			Asset Class		Locomotive				+	General		General
Feature Category	Feature	Req Name	Req Desc Asset Type		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	13	2	2	2	0	1	3	2	1
Planned Maintenance and Inspection	General	Contractors for Preventative Maintenance	created by the system) 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		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		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



ARRC TAM Phase 2

Requirements Matrix

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

Color Coding

			Asset Category	Overall	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		General	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	General	Multiple Shop / Work	Accommodate multiple									
Order Management		Locations	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	General	Capture Usage Readings	Ability to capture the									
Order Management		on Work Orders	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 assessement, complaint, etc	22	3	3	3	2	3	3	3	2
Work Orders and Work	General	Assign Work Orders	Ability to assign work									
Order Management			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)	Abililty to categorize costs by OPEX/CAPEX categories and subcatgory (e.g. OPEX - Preventative (e.g. Inspection), Corrective, or Break-Fix (must fix	19	2	3	2	2	3	3	2	2
			now) and CAPEX (e.g. ARRC, Agency (if application) or Other (if applicable)									



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
Work Orders and Work Order Management	General		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	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	Cost Reporting	Ability to see aggreggate 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		2	3	2	3	2	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	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	3
Work Orders and Work Order Management	General		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.	10	3	0	2	3	3	3	2	2



Reliability Matters

Color Coding

Desired (Medium Priority) Priority Not Set

			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	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	Prioritization of Work Orders	Ability to prioritze or rank work orders; a default prioritzation may be based on criticality rating of asset	22	3	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		1	3	2	2	3	1	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	1
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	Work Orders against Assets in Hierarchy	Allow for a work order to be written against assets at various levels of the hierarchy		3	3	3	3	2	3	1	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	3
Work Orders and Work Order Management		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
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



Essential (High Priority)
Desired (Medium Priority)
Optional (Low Priority)

Priority Not Set

Color Coding

			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	Req Name		General	General	General	General	General	General	General	General	General
	General	Contractor or Vendor	Ability to record work									
Order Management		Work	details (possibly through									
			an import) performed by	14	3	0	1	2	1	3	2	2
			contractors or vendors									
			on work orders									
	General	Mechanic/Technican	Mechanic/Technician									
Order Management		Records Work	records their work on the									
			work order and has									
			access to info they need									
			thrugh the system. Only									
			person with direct	18	3	3	0	1	3	3	2	3
			knowledge of work is									
			Mechanic/Technician									
			and they should be able									
			to record their work as it									
W- 1 0 -1 1 W- 1	C	De de la Maria Cada	is done.									
	General	Parts on Work Order	Ability to specify parts or									
Order Management			work order and whether they came from									
			inventory, were ordered,	16	3	3	1	1	3	3	1	1
			or purchaed with a									
			purchasing card									
Work Orders and Work	General	Failure Analysis	Improved ability to									
Order Management	General	Tunare Analysis	analyze failures and their									
Order Wandgement			causes. Currently can									
			only rely on what has									
			been written on the worl	k 19	3	3	1	1	3	3	2	3
			orders; and its necessary									
			to look at each individual									
			work order.									
Work Orders and Work	General	Reporting Tools	Base requirement are									
Order Management			tools that are better than	1								
			an Excel export. There is									
			a need for analytics for									
			trending, analysis,									
			failure, and investment									
			planning. Analytics may									
			be in a separate tool but	21	2	2	2	2	2	2	2	2
			the information to	21	2	,	2	2	3	3	J	3
			support it must be									
			reportable. Currently									
			Excel is the reporting too									
			- either data is manually									
			entered or exported									
			from JDE									
Waller III		W-10 1 2 10 1	Abilita a S									
	General	Work Order Notification	s Ability to configure									
Order Management			notifications for new or									
			outstanding work									
			including PM, inspection	19	3	1	2	2	3	2	3	3
			or work orders to									
			designated users (e.g. on									
			being created or									
			assigned)									



ARRC TAM Phase 2

Requirements Matrix

Color Coding

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

			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
<u> </u>	Feature	Req Name		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	s 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			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		23	3	3	3	3	3	2	3	3
Work Orders and Work Order Management	General	Estimated Effort on Worl Orders		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



Reliability Matters

Color Coding

Essential (High Priority)

Desired (Medium Priority)

Optional (Low Priority)

Priority Not Set

			Asset Category	Overall	Rolling Stock	Rolling Stock	Fixed Guideway	Fixed Guideway	Fixed Guideway	Service Vehicles	Facilities	Communications
			Asset Class	General	Locomotive		Track	Bridge	Signal	General	Buildings	General
Feature Category	Feature	Req Name		General	General	General	General	General	General	General	General	General
Materials Management	General		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		2	0	3	2	1	2	1	2
Materials Management	General	Component Parts - Obsolescence	(e.g. Mile Post) 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 surplused; and seasonal changes	15	3	2	1	2	2	3	1	1
Materials Management	General	Inventory Purchase Plan		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



Reliability Matters

Color Coding

Desired (Medium Priority) Priority Not Set

					Rolling Stock	Rolling Stock	Fixed Guideway	Fixed Guideway	Fixed Guideway		Facilities	Communications
			Asset Class	General	Locomotive	Railcars	Track	Bridge	Signal	General	Buildings	General
	Feature	Req Name	Req Desc Asset Type	General	General	General	General	General	General	General	General	General
Component Tracking and	General	Component Service Life	Ability to specify									
Rebuild			expected service life of a	15	3	2	1	2	3	2	1	1
			component or part									
Component Tracking and	General	Component Installation	Track when components									
Rebuild		and Removal	are installed, removed,									
			and their disposition (e.g.									
			transferred, shelved,									
			disposed of, rebuilt) May									
			be differences in	15	3	2	2	1	3	2	1	1
			handling with									
			components that have									
			serial numbers vs those									
			that do not.									
Component Tracking and	General	Part Rebuild	Indicator that a part in									
Rebuild			inventory or being	9	2	0	1	1	1	2	1	1
			installed is a rebuild									
Component Tracking and	General	Usage for Components	Calculated usage based									
Rebuild			on the usage measures									
			for asset(s) installed in;	13	2	3	1	1	1	3	1	1
			for reliablity and		_							
			preventative									
			maintenance									
Warranty Management	General	Warranty	Ability to specify for									
			parts whether a serial									
			number is expected,									
			what warranty terms are,									
			and whether it is from									
			purchaed or installed	11	3	0	1	1	1	3	1	1
			date. Associate warranty									
			contact info or procedure									
			with record (procedures									
			vary by Vendor/OEM)									
Capital Projects and	General	Total Cost of Ownership	Mathod for recording									
	General		and displaying TCO; what									
Campaigns		Reporting	is spent to maintain									
			assets and the frequency									
			of maintenance versus									
			replacement of the asset	15	3	3	1	2	1	1	3	1
			or systems within the	15	5	3	1	2	1	1	3	1
			asset; allow for long term									
			planning of asset or									
			system replacement									
			system replacement									
	I	<u> </u>	<u> </u>									



Color Coding
Essential (High

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

			Asset Category	Overall	Rolling Stock	Rolling Stock	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
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 additio to funding by year and b funding source	20	3	3	1	3	3	3	3	1
Capital Projects and	General	Asset Category / Class	Ability to show the									
Campaigns		Composition over Time	composition of assets in an asset category / class over time by asset hierarchy or groupings a well as ownership (e.g. ARRC, leased, rented)	12	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 availablity for work in a way which adheres and is approved by regulatory agencies	0	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 on system	10	2	2	3	2	3	3	3	1



Reliability Matters

Color Coding

Essential (High Priority)

Desired (Medium Priority) Priority Not Set

Asset Hierarchy

7.0500 1110101	•	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, Asset Data	Central System of Record										
and Info		source of information									
		including asset and work									
		activity; acknowledging									
		that specialized systems	24	3	3	3	3	3	3	3	3
		may be used (and					Ĭ				
		possibly linked or									
		integrated) for									
		configuration, status,									
		and notifications									
Asset Hierarchy, Registry, Asset Data											
and Info	and Linking	approach to storing and									
		accessing asset-related									
		documents including	23	3	2	3	3	3	3	3	3
		drawings, schedules,									
		manuals, pictures, etc.fo	r								
		both digital and paper									
Accet History Pariety, Accet Date	Dania Assat Attaileutes	documents									
Asset Hierarchy, Registry, Asset Data and Info	Basic Asset Attributes	Ability to record basic									
and info		asset data common to									
		asset management systems including an	21	3	3	3	3	3		2	1
		ARRC unique identifier,	21	3	5	3	3	3	3	2	1
		year, make, model, seria									
		number, color, etc.									
Asset Hierarchy, Registry, Asset Data	Asset Data System	Ability to support									
and Info	Identifiers	multiple external system									
and mile	lucitineis	identifiers for an asset if									
		they differ from internal	21	3	3	3	1	3	3	2	3
		ARRC identifiers									
		Anne identifiers									
Asset Hierarchy, Registry, Hierarchy	Asset Hierarchy	Model and enforce									
and Info	, isset merareny	hierarchical relationships									
		between assets;									
		particulary parent-child									
		particularly partition commu	21	3	1	3	3	3	3	2	3
Asset Hierarchy, Registry, Asset Data	Mobile Access to	Ability to access digital									
and Info	Documents	documents outside of									
		the office; if on mobile									
		possibly allow offline	20	3	1	2	3	3	3	2	3
		mode by caching									
		documents related to the									
		assets									
Asset Hierarchy, Registry, Hierarchy	Classes or Grouping of	Organize and manage									
and Info	Assets	equipment as a class or									
		group; useful for planned	19	3	3	1	3	2	3	2	2
		maintenance programs									
		and reporting									
-										· · · · · · · · · · · · · · · · · · ·	



Reliability Matters

Color Coding

Desired (Medium 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	General
Asset Hierarchy, Registry	, Asset Data	Location by Mile Post	In addition to a named									
and Info			location and GPS / GIS									
			coordinates support the	18	3	0	3	3	3	1	2	3
			location by ARRC Mile									
			Post									
Asset Hierarchy, Registry	, Asset Data	NTD Reporting Attribute										
and Info			attributes that allow for									
			direct or easy mapping									
			for NTD reporting	17	3	3	3	2	1	2	2	1
			without the need to									
			maintain separately in									
			Excel.									
Asset Hierarchy, Registry	, Hierarchy	Components	Include components and	l en								
and Info			sub-components,	17	2	2	3	2	2	2	2	1
			assemblies, systems and	17	,	4	,	2	2	2	2	-
			similar entities									
Asset Hierarchy, Registry	, Asset Data	Asset Data Integration	Ability to synchronize or									
and Info			integrate basic asset									
			information with									
			external vendors /	16	3	3	3	1	1	3	1	1
			systems minimize need	10	Ĭ		Ĭ	*		J	-	-
			to manually check and									
			update records for									
			accuracy.									
Asset Hierarchy, Registry	, Asset Data	GPS/GIS Position	Ability to record GPS									
and Info		Information (Fixed)	locations for GIS at the									
			asset level; either from	16	3	0	2	2	3	1	2	3
			device or by selecting or	l en								
			map									
Asset Hierarchy, Registry	, Asset Data	Link (both ways) to GIS	Support hyperlinking									
and Info			from asset management									
			system to GIS and from	15	2	1	2	2	2	2	2	2
			GIS to asset									
			management									



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	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	23	3	3	3	3	3	3	2	3
Asset Availability and Status	Status	Condition Rating System	rating system for assets (e.g. 1 to 5)	21	3	3	2	3	3	3	2	2
Asset Availability and Status	Availability	Availability Calculations	Show availablity 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	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	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 reliablity analysis and reporting	18	3	3	1	1	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	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	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



Color Coding Desired (Medium 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	General
Asset Availability and	Status	Import External	Ability to import									
Status		Transaction Data	transaction data from									
			external systems (and	42							2	
			when needed ability to	13	3	1	0	1	1	3	2	2
			enter that transaction									
			manually)									
Asset Availability and	Status	Asset Rate and Usage	Support mechanism to									
Status		Calculation	calculate costs of asset									
			and which groups used									
			the asset during the	11		1	0		4		1	4
			period. This calculation	11	3	1	0	1	1	3	1	1
			may be an initial input to									
			Finance for cost									
			allocation.									
Asset Availability and	Availability	Availability - Seasonal	Ability to indicate									
Status		Variations	seasonal status (e.g.	11	2	2	2	1	1	1	1	1
			open /closed, not being	11	2	2	2	1	1	1	1	1
			used, etc.)									
Asset Availability and	Status	GPS/GIS Position	Utilize GPS not only for									
Status		Information (Mobile)	current but also historica	al 10	2	0	0		1	3	1	2
			data for assets that are	10	2	U	U	1	1	3	1	2
			mobile									
Asset Availability and	Status	Status - Location	Asset location in as near									
Status			real-time as it is possible									
			to have the status	9	3	0	0	1	2	1	1	1
			changed by a system or									
			person									



Color Coding Desired (Medium Priority)

Priority Not Set

Configuration

			Asset Category Asset Class	Overall General	Rolling Stock Locomotive	Rolling Stock Railcars	Fixed Guideway Track	Fixed Guideway Bridge	Fixed Guideway Signal	Service Vehicles General	Facilities Buildings	Communications General
Feature Category	Feature	Reg Name	_	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.		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		3	2	2	0	1	2	1	1



Color Coding

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

Fault/Problem Detection

			Asset Category	Overall General	Rolling Stock Locomotive	Rolling Stock Railcars	Fixed Guideway	Fixed Guideway	Fixed Guideway Signal	Service Vehicles General	Facilities Buildings	Communications General
			Asset Class				Track	Bridge				
Feature Category	Feature	Req Name	Req Desc Asset Type	General	General	General	General	General	General	General	General	General
Fault/Problem Detection	General	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	Management Systems		16	3	3	1	0	3	1	2	3



Color Coding Desired (Medium 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	General
Planned Maintenance	General	Generate Work Orders	Ability to generate work									
and Inspection		from Inspection Results	orders from inspection									
			results (would typically	24	3	3	3	3	3	3	3	3
			be categorized as									
			corrective actions)									
Planned Maintenance	General	Inspection Schedules	Support ability to									
and Inspection			schedule recurring									
			inspections that will	23	3	2	3	3	3	3	3	3
			automatically create a									
			work order									
Planned Maintenance	General	Digital-First Inspections	Ability to record									
and Inspection			inspections digitally in									
			the field (with an offline									
			mode available); subject									
			to any regulatory	22	3	3	3	3	3	3	2	2
			requirements and									
			workflow requirements									
			worknow requirements									
Planned Maintenance	General	Common Inspection	Desire a means of									
and Inspection	General	Record to Satisfy	managing asset and									
and inspection		Multiple Agencies	inspection information									
		Multiple Agencies	1	10	2	3	3		3	1	2	1
			that can be used to	19	3	5	3	5	5	1	2	1
			satisfy muliple agency									
			regulatory requirements									
			(e.g. FRA and FTA)									
Planned Maintenance	General		Automated planning and									
and Inspection		Tracking and Planning	compliance tracking of	19	3	3	3	3	1	3	2	1
			regulatory inspection									
			requirements									
Planned Maintenance	General	Digital Workflows for	Support digital									
and Inspection		Review and Approval	workflows for review and									
			approval for inspections									
			(and where otherwise	15	2	1	3	3	1	1	2	2
			required) that is	13	-	-	J		-	_	-	2
			consistent with any									
			regulatory workflow									
			requirements									
Planned Maintenance	General	PM Service Calculation	Ability to calculate PM									
and Inspection			serivce requirements on									
			more than one aspect of	45	_							
			asset usage (e.g.	15	3	3	1	0	1	3	3	1
			calendar time, hours,									
			miles, fuel usage, etc.)									
Planned Maintenance	General	PM Job Plan	Ability to setup standard									
and Inspection			template for labor and									
			parts for preventative									
			maintenance routines to									
			allow for forecasting of	15	2	2	2	2	1	2	3	1
			parts and labor needed									
			parts and labor needed									



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	General
Planned Maintenance	General	Pre-Use and Frequent	Ability to record frequent	t								
and Inspection		Inspection Checklists	(daily) or pre-use									
			inspections with a									
			checklist; support	14	3	3	0	0	1	3	2	2
			different checklists based	t								
			on asset category and									
			characteristics									
Planned Maintenance	General	Inspection Data	Ability to retain									
and Inspection		Retention Periods	electronic copieds of									
			records indefinitely;	13	2	3	2	2	1	0	2	1
			Federal agencies usually	15	-	, and the second	2	-	-	Ů	-	*
			allow for only a certain									
			period of time									
Planned Maintenance	General	PM Notification	Ability for notifications to									
and Inspection			be automatically sent to									
			maintenance and	13	2	2	2	0	1	3	2	1
			assigned user group									
			when a PM is due (or									
DI 100 : 1			created by the system)									
Planned Maintenance	General	Contractors for	Ability to define vendors									
and Inspection		Preventative	which are used for PM	40		2					1	
		Maintenance	and inspection activities	10	2	2	0	2	1	1	1	1
			on assets, systems or components									
Planned Maintenance	General	Incorporate Season and	Accommodate recording						_			
and Inspection	General	Weather	season and weather into									
and mapecuon		vvedilei	usage information for									
			preventative or	10	3	1	1	0	1	1	2	1
			predictive maintenance	10				Ü			-	-
			planning and									
		1	1			Parameter 1						



ARRC TAM Phase 2

Requirements Matrix

Color Coding Essential (High Priority) Desired (Medium Priority) Priority Not Set

			Asset Category		Rolling Stock	Rolling Stock	Fixed Guideway	Fixed Guideway		Service Vehicles	Facilities	Communications
			Asset Class		Locomotive	Railcars	Track	Bridge	Signal	General	Buildings	General
	Feature	Req Name		General	General	General	General	General	General	General	General	General
Work Orders and Work Order Management	General		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		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 or it (e.g. Excel)	23	3	3	3	3	3	2	3	3
Work Orders and Work Order Management	General		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		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 assessement, complaint, etc	22	3	3	3	2	3	3	3	2



Requirements Matri

Color Coding

Essential (High Priority)

Desired (Medium Priority)

Priority Not Set

					Rolling Stock	Rolling Stock	Fixed Guideway	Fixed Guideway		Service Vehicles	Facilities	Communications
			Asset Class		Locomotive	Railcars	Track	Bridge	Signal	General	Buildings	General
	Feature	Req Name		General	General	General	General	General	General	General	General	General
Work Orders and Work Order Management	General	Prioritization of Work Orders	Ability to prioritze or rank work orders; a									
			default prioritzation may be based on criticality	22	3	3	3	3	3	3	1	3
			rating of asset									
Work Orders and Work	General	Work Order Source	Ability to record the									
Order Management			source of a work order									
			(e.g. result of an									
			inspection, end user	21	3	1	3	2	3	3	3	3
			request, operations									
			observation,									
			alarm/notification, or internally initiated)									
Work Orders and Work	Conoral	Ease of Use	Focus on ease of use for									
Order Management	General	Lase of ose	recording work yet need									
order management			the ability to record									
			meaningful information	21	3	2	2	3	3	3	2	3
			to be useful (e.g. Task									
			Coding)									
	General	Reporting Tools	Base requirement are									
Order Management			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	21	2	3	2	2	3	3	3	3
			support it must be									
			reportable. Currently									
			Excel is the reporting too									
			- either data is manually									
			entered or exported									
			from JDE									
Work Orders and Work	General	End-Users and Work	Ability for end users (e.g.									
Order Management	General	Orders	Operations) to initiate									
order management		0.46.5	work requests through a									
			complaint process and to		3	3	0	2	3	3	3	3
			see status and history of									
			work orders									
Work Orders and Work	General	Work Order Attachments										
Order Management			link, and/or display (if digital) procedures,									
			checklists, and bills of	20	3	1	2	3	3	3	3	2
			materials needed for									
			work order									
Work Orders and Work	General	Future and Unscheduled										
Order Management		Work Orders	have unscheduled or									
			future date work orders		,	1	3	3	3	3	2	2
			to record work and have		3	1	3	3	3		2	2
			it available for scheduling									



Color Coding

Essential (High Priority)

Desired (Medium Priority) Priority Not Set

			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		General	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	19	3	2	3	3	1	3	2	2
Work Orders and Work Order Management	General	Categorize Costs (OPEX/CAPEX)	paper) for a work order Ability to categorize costs by OPEX/CAPEX categories and subcatgory (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
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		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 wor orders; and its necessary to look at each individua work order.	< 19	3	3	1	1	3	3	2	3
Work Orders and Work Order Management	General	Work Order Notification	ns Ability to configure notifications for new or outstanding work including PM, inspection or work orders to designated users (e.g. or 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 commor issues, causes, and their resolution	18	3	1	0	3	3	3	2	3
Work Orders and Work Order Management	General	Custom Categorize Woo Orders	rk 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.	40	3	0	2	3	3	3	2	2



ARRC TAM Phase 2

Requirements Matrix

Color Coding Desired (Medium Priority) Priority Not Set

		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 General	Integrate Financial	Work Order system mus	st								
Order Management	System	be integrated or									
		interfaced with the	18	3	1	1	3	1	3	3	3
		financial system									
		(currently JDE)									
Work Orders and Work General	Mechanic/Technican	Mechanic/Technician									
Order Management	Records Work	records their work on th	ie								
		work order and has									
		access to info they need									
		thrugh the system. Only									
		person with direct	18	3	3	0	1	3	3	2	3
		knowledge of work is									
		Mechanic/Technician									
		and they should be able									
		to record their work as it is done.	t								
Martin Ordana and Martin Cananal	Checklist Criteria for	Ability to define criteria									
Work Orders and Work General Order Management	Repair - Create Work	indicating									
Order Management	Order	repair/adjustment or									
	Order	replacement is required									
		on checklist items.									
		Automatically create a	17	2	1	1	3	3	2	2	3
		work order to with the	17	-	-	-	Ĭ		-		· ·
		task or add a line item to									
		work order if already									
		created from this									
		checklist.									
Work Orders and Work General	Assign Work Orders	Ability to assign work									
Order Management		orders to technicians									
		within the appropriate	17	3	0	3	0	3	2	3	3
		skillset pool and/or									
		geographic location									
Work Orders and Work General	Cost Reporting	Ability to see aggreggate	e								
Order Management		costs on assets by basic									
		criteria including System	1,								
		"Type", Time Period,									
		PM, Corrective or Break		2	3	2	3	2	2	2	1
		Fix, By OPEX/CAPEX (or									
		funding source), by									
		hierarchy or geography									
Work Orders and Work General	Group Work Orders by	Group work orders by									
Order Management	Geographic Area	geographic area so they									
		do not need to be	17	2	1	2	2	3	2	2	3
		manually grouped for									
		review and assignment									



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

			Asset Category	Overall	Rolling Stock	Rolling Stock	Fixed Guideway	Fixed Guideway	Fixed Guideway	Service Vehicles	Facilities	Communications
			Asset Class	General	Locomotive		Track	Bridge	Signal	General	Buildings	General
Feature Category	Feature	Req Name		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		3	1	2	2	3	2	2	2
			than 1 hour)									
Work Orders and Work Order Management	General	Parts on Work Order	Ability to specify parts or work order and whether they came from inventory, were ordered, or purchaed 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 ir 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		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		12	2	1	0	1	2	3	2	2



ARRC TAM Phase 2

Requirements Matrix

Color Coding

Desired (Medium Priority) Priority Not Set

			Asset Category	Overall	Rolling Stock	Rolling Stock	Fixed Guideway	Fixed Guideway	Fixed Guideway	Service Vehicles	Facilities	Communications
		1	Asset Class	General	Locomotive	Railcars	Track	Bridge	Signal	General	Buildings	General
eature Category	Feature	Req Name	Req Desc Asset Type	General	General	General	General	General	General	General	General	General
Vork Orders and Work	General	Reimbursable Work	Ability to indicate that									
Order Management			work is reimbursable by									
			another party and outpu	t 13	1	2	2	2	3	1	1	1
			can be prepared to									
			support Finance									
ork Orders and Work	General	Estimated Effort on Work	1									
der Management		Orders	estimated labor or costs									
			on work orders to aid in	13	2	1	1	2	3	2	1	1
			planning and scheduling									
			or to provide estimates									
- 1 0 - 1 1 11/ 1	6	Cook and the cook be added	to end users									
ork Orders and Work	General	Capture Usage Readings	Ability to capture the									
der Management		on Work Orders	current usage readings	12								
			(hours, miles, etc.) on	12	3	2	0	0	1	3	2	1
			work orders and PMs									
ork Orders and Work	Conoral	Lleage Deadings	when they are opened									
der Management	General	Usage Readings	Ability to quickly record (or import from external									
der Management			systems) usage readings		3	0	0	1	1		2	1
			(e.g. miles, hours)	11	,	U	0	1	1	3	2	1
			(e.g. Illies, flours)									
ork Orders and Work	General	Multiple Shop / Work	Accommodate multiple									_
Nork Orders and Work Order Management	General	Locations	shops and work locations									
			including ARRC shops	q	1	1	0	0	1	3	2	1
			and work in the field		*	1					2	1
			and work in the nelu									



Color Coding

Essential (High Priority)

Desired (Medium Priority)

Optional (Low Priority)

Priority Not Set

Materials Management

	iviaterials iviar		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	Req Name	Req Desc Asset Type	General	General	General	General	General	General	General	General	General
Materials Management	General	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		15	3	2	1	2	2	3	1	1
Materials Management	General		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	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			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

Color Coding

Desired (Medium 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	General
Component Tracking and General	Component Service Life	Ability to specify									
Rebuild		expected service life of a	15	3	2	1	2	3	2	1	1
		component or part									
Component Tracking and General	Component Installation	Track when components									
Rebuild	and Removal	are installed, removed,									
		and their disposition (e.g	Į.								
		transferred, shelved,									
		disposed of, rebuilt) May									
		be differences in	15	3	2	2	1	3	2	1	1
		handling with									
		components that have									
		serial numbers vs those									
		that do not.									
Component Tracking and General	Component Serial	Ability to track								_	
Rebuild	Number Tracking	components by serial									
Rebuild	Number Tracking	number and when they									
		were put on, taken off,									
		moved to another asset									
		or put on shelf (serial	13	3	0	2	1	2	2	1	2
		number of part not on									
		unit could require									
		component to be an									
		"asset")									
Component Tracking and General	Usage for Components	Calculated usage based									
Rebuild		on the usage measures									
		for asset(s) installed in;	13	2	2	1	1	1	3	1	1
		for reliablity and	13	2		<u> </u>	_	*	Ĭ	<u> </u>	*
		preventative									
		maintenance									
Component Tracking and General	Component	Ability to identify									
Rebuild	Compatibility	compatibility of	10	2	0	2	1	1	2	1	1
		components with asset									
Company of Transition and Comment	David Dala, 11-1	configurations									
Component Tracking and General Rebuild	Part Rebuild	Indicator that a part in	0	2	0	1	1	1	2	1	1
Rebuild		inventory or being installed is a rebuild	9	2	0	1	1	1	2	1	1
		inistalled is a rebuild									



Reliability Matters

Warranty Management

Color Coding

Essential (High Priority)

Desired (Medium Priority) Priority Not Set

wallality wallagell	ient							
		Asset Category	Overall	Rolling Stock	Rolling Stock	Fixed Guideway	Fixed Guideway	Fixed Guideway
		Asset Class	General	Locomotive	Railcars	Track	Bridge	Signal
Feature	Req Name	Req Desc Asset Type	General	General	General	General	General	General

			Asset Class	General	LOCOINOLIVE	Maiicars	ITACK	Diluge	Jigilai	General	Dullulligs	General
Feature Category	Feature	Req Name	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									
			purchaed or installed	11	2	0	4	1	4	,	4	4
			date. Associate warranty	11	3	U	1	1	1	3	1	1
			contact info or procedure									
			with record (procedures									
			vary by Vendor/OEM)									

Communications

Service Vehicles

Facilities



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

Capital Projects

	Capital Flojects		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	Reg Name		General	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		2	1	2	2	1	3	1	1



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	General
Timekeeping	General	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 availablity for work in a way which adheres and is approved	9	2	1	1	0	3	0	0	2