

Document : **RESOURCE SCHEDULING SYSTEM FOR  
TRANSNET FREIGHT RAIL COAL TRAFFIC**  
Date of Submission of Response : 7 April 2009  
Version : 1.0

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S.No	Question	Answer	Document Name	Section Name	Page No	Remarks If any
1	We understand that Transnet is using SAP as the back office system - Please confirm? If not, what is the back office system used by Transnet?	In Transnet Freight Rail, one of the 5 Operational Divisions (OD) of Transnet, SAP is used primarily for accounting, human resources, materials management as well as financial and management information.	REQUEST FOR PROPOSAL NUMBER "1030 72855"			
2	We understand there currently are 5 divisions - each with different ERP /or legacy systems. To which group does this RFP belongs to ?	The 5 Operating Divisions of Transnet are Transnet Freight Rail (TFR), Port Operations, Port Authority, Pipelines and Rail Engineering. This RFP falls within TFR	REQUEST FOR PROPOSAL NUMBER "1030 72855"			
3	What is the ERP / legacy solution architecture in the group to which this RFP belongs?	There is not a single Enterprise Resource Planning system. The legacy system for operational control and information is an in house developed system, Sprint. Architecture is Cobol/IMS using DB2	REQUEST FOR PROPOSAL NUMBER "1030 72855"			
4	What are the components ( Modules) of the ERP system implemented in this particular group?	Not applicable	REQUEST FOR PROPOSAL NUMBER "1030 72855"			
5	Who are Transnet's customers?	For the purpose of this RFP, the customers are the mines with Richards Bay Coal Terminal (RBCT) playing a coordinating role	REQUEST FOR PROPOSAL NUMBER "1030 72855"	Part 2	11 to 18	
6	What is the general nature of the dynamic demand profiles? With what time granularity are these profiles monitored and recorded?	The demand varies from week to week for a portion of the demand. It is received on a weekly basis. The resolution is daily.	REQUEST FOR PROPOSAL NUMBER "1030 72855"	Part 2	11 to 18	
7	What is the time horizon and the time interval for the LTT (Long Term Timetable )?	Envisaged to cover a quarter with quarterly updates a month before the quarter starts	REQUEST FOR PROPOSAL NUMBER "1030 72855"	Part 2	11 to 18	The Long Term Timetable (LTT) does not exist yet. It is intended to be a product emanating from this RFP
8	Is the LTT primarily an 'optimal' or a 'feasible' plan? If 'optimal', what is the objective function optimized?	Envisaged to be an optimal plan. Maximising tonnage moved	REQUEST FOR PROPOSAL NUMBER "1030 72855"	Part 2	11 to 18	
9	Does the LTT cover locos, wagons and crew? Does it cover equipment maintenance and crew off durations?	The plans (LTT and STT) must cover locomotives, wagon sets and crew and consider equipment maintenance (infrastructure and rolling stock) availability [which is an input into The Solution.]	REQUEST FOR PROPOSAL NUMBER "1030 72855"	Part 2	11 to 18	
10	Does the LTT cover deadheading etc for locos, wagons and crew?	The time tables should include the locomotive working and crew requirement that could include deadheading movements	REQUEST FOR PROPOSAL NUMBER "1030 72855"	Part 2	11 to 18	
11	Does the LTT cover the level of Muxing required?	Muxing = multiplexing? More detail of question, please	REQUEST FOR PROPOSAL NUMBER "1030 72855"	Part 2	11 to 18	
12	What aspects of the Terminals are optimized in the LTT?	The LTT does not exist yet. The schedules should consider the limitations/constraints of terminals on the solution and should suggest a proposed working (given process constraints) that will maximise throughput	REQUEST FOR PROPOSAL NUMBER "1030 72855"	Part 2	11 to 18	
13	Will it be possible to inspect the LTT algorithms?	The LTT does not exist yet and is envisaged as a product of this RFP	REQUEST FOR PROPOSAL NUMBER "1030 72855"	Part 2	11 to 18	

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14	Is 'Dynamic' or 'reactive' planning to be automated or is it to be done manually with system support?	Essentially the weekly process must be repeated for the remainder of the week from the point where the level of deviation(s) make the plan unusable. The least amount of manual processing is desired to reduce the dependency on operators	REQUEST FOR PROPOSAL NUMBER "1030 72855"	Part 2	11 to 18	
15	What are the most likely causes for disruption and what are the common corrective measures?	This question warrants a full analysis and information session that will take place at the time of technical specification For now suffice with: Failures of infrastructure and rolling stock, derailments, adherence to schedules each addressed in a different manner	REQUEST FOR PROPOSAL NUMBER "1030 72855"	Part 2	11 to 18	
16	Is disruption monitoring and management a batch or on-line requirement?	Disruptions and deviations are monitored on a continuous basis. Localised and smaller deviations to be managed and corrective action taken as soon as possible after the event. In cases where major deviations occur or where corrective action has a wide impact, a batch rescheduling would probably be required. The Solution should prescribe.	REQUEST FOR PROPOSAL NUMBER "1030 72855"	Part 2	11 to 18	This question is understood as "Must disruptions be resolved continuously (i.e. on-line) or once per period (e.g. daily)"
17	Is it required to be able to off-line simulate a plan?	Not a critical requirement, but it will be an added benefit.	REQUEST FOR PROPOSAL NUMBER "1030 72855"	Part 2	11 to 18	
18	What aspects of 'Terminal throughput' are to be optimized?	Maximum tonnage through the system is the overall item to be optimised taking cognisance of the capacity and constraints of the yards and terminals	REQUEST FOR PROPOSAL NUMBER "1030 72855"	Part 2	11 to 18	This requirement was included to ensure that the schedule that is produced is feasible, given the constraints of terminals and yards in the system
19	Is the information data required for weekly predictive and reactive scheduling already available in digital form? If so, has it been analyzed for quality?	The existing information used to produce the current weekly schedules, i.e. demand, constraints, resource availability exists in various forms such as spreadsheets. No formal analysis done.	REQUEST FOR PROPOSAL NUMBER "1030 72855"	Part 2	11 to 18	
20	Constraints can be changed only by altering the thresholds. Addition of qualitatively new types of constraints may need algorithm design changes. Is that OK?	All known constraints must be included and catered for in The Solution to limit algorithm changes later for constraints that are currently unknown. This underlines the importance of a thorough design.	REQUEST FOR PROPOSAL NUMBER "1030 72855"	Part 2	11 to 18	
21	Scheduling is NP Hard or NP Complete. Scalability will need more H/W, but the computational engine would be replicable. Is that OK?	Yes	REQUEST FOR PROPOSAL NUMBER "1030 72855"	Part 2	11 to 18	

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22	Would it be possible to see statistics on loco and wagon fleet types sizes, number and types of crew, if crew & loco types are related ?	Yes The Solution should determine crew requirements that would be rostered in a related but separate system.	REQUEST FOR PROPOSAL NUMBER "1030 72855"	Part 2	11 to 18	
23	Which is the IT system used to capture customer demand?	Demand is provided by mining fraternity by way of spreadsheets - used in existing scheduling. All customer demand is captured in a Java module of Service Management called "Next Week's Business" as the start of the TFR invoicing process	REQUEST FOR PROPOSAL NUMBER "1030 72855"	Part 2 - Section 2	12	
24	Which is the IT system used to capture delivery resources (Asset Management System) ?	SAP and Sprint. The Integrated Asset management System involving real time tracking through tagging of rolling stock is being rolled out. This real time tracking will be available to The Solution	REQUEST FOR PROPOSAL NUMBER "1030 72855"	Part 2 - Section 2	12	
25	Which is the IT system used to carry out Maintenance Scheduling?	IOMS - Infra and SAP	REQUEST FOR PROPOSAL NUMBER "1030 72855"	Part 2 - Section 2	14	
26	Can we assume that a "Train-the-trainer" approach be followed for this engagement wherein the vendor team will train the people in Transnet's training department, who in turn will train the end-users?	Yes	REQUEST FOR PROPOSAL NUMBER "1030 72855"	Part 3 - Section 1	15	Refer to Part 3, Item 1 Scope of Work, sub-item 7
27	What is the time-frame that Transnet is looking for the Maintenance and Support costs?	Assume the question reads: "For what period does TFR intend to enter into a maintenance and support agreement with the vendor for The Solution". For this project, to be determined. Typically for at least 2 years.	REQUEST FOR PROPOSAL NUMBER "1030 72855"	Part 3 - Section 1	17	
28	Through the L0 diagram, it is clear that the "Weekly Resource Capacity Availability" will be an input to the proposed system. However, in the L1 diagram, the processes comprise the maintenance scheduling activities which are inputs to the "Resource Capacity Availability" calculation. Is Transnet expecting the maintenance scheduling activities to happen in the proposed system? OR will the resource capacity availability be a direct input to the system?	In the current setup resource capacity, including maintenance scheduling, is an input to the process with which the possible throughput of coal for the period in question is then determined. Demand is then tempered on this estimated throughput capability to limit the number of iteration for feasibility.	REQUEST FOR PROPOSAL NUMBER "1030 72855"	Part 3 - Section 1	17	
29	We understand that COSMO is the existing resource scheduling system for coal line. Which is the system currently in place for domestic coal service.	The Integrated Train Plan (ITP) is used for all other traffic.	REQUEST FOR PROPOSAL NUMBER "1030 72855"	Part 3 - Section 1	17	
30	Can Transnet share with the bidders if they have any preferred project implementation timeline?	There is not a date, but there is urgency for the provision of a solution.	REQUEST FOR PROPOSAL NUMBER "1030 72855"	Part 4	20	
31	Does Transnet have preference towards Development OR Packaged solution?	No	REQUEST FOR PROPOSAL NUMBER "1030 72855"	Part 4	20	

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32	Is there any deadline before which proposed system should go to production	There is not a date, but there is urgency for the provision of a solution.	REQUEST FOR PROPOSAL NUMBER "1030 72855"	Part 4	20	At the time of detailed design, possible functionality vs. time will be considered and agreed in order to get the maximum benefit soonest in a Pareto approach. A phased solution is possible
33	What unit is used at Transnet to measure 'throughput'	Tonnage delivered for period under review and equivalent annual tempo of delivery. The cycle time indicates system performance.	REQUEST FOR PROPOSAL NUMBER "1030 72855"	Part 4	20	