Request For Proposal

Department of Executive Services
Finance and Business Operations Division
Procurement and Contract Services Section
206-684-1681   TTY Relay: 711

King County

Date: June 03, 2004

RFP Title:	**On-Board Systems / Communication Center System**
RFP Number:	**04-001PR**
Due Date:	**August 19, 2004- 2:00 P.M.**
Buyer:	Paul Russel, paul.russell@metrokc.gov, 206-684-1054

This RFP is organized into three parts:

Part A – Procurement and Evaluation
http://www.metrokc.gov/finance/procurement/rfpdocs/2004/June/GoodsAndServices/04-001/PART_A.pdf

Part B – Contract Terms and Conditions
http://www.metrokc.gov/finance/procurement/rfpdocs/2004/June/GoodsAndServices/04-001/PART_B.pdf

Part C – OBS/CCS Statement of Work - Table of Contents
http://www.metrokc.gov/finance/procurement/rfpdocs/2004/June/GoodsAndServices/04-001/C_Table_of_Contents.pdf

  Section 1 – OBS/CCS Business Requirements
  http://www.metrokc.gov/finance/procurement/rfpdocs/2004/June/GoodsAndServices/04-001/Part_C_Sec1.pdf

  Section 2 – Level 1 Requirements
  http://www.metrokc.gov/finance/procurement/rfpdocs/2004/June/GoodsAndServices/04-001/Part_C_Sec2.pdf

  Section 3 – Level 2 Requirements
  http://www.metrokc.gov/finance/procurement/rfpdocs/2004/June/GoodsAndServices/04-001/Part_C_Sec3.pdf

Appendices

  A. TCIP Data Dictionary
  http://www.metrokc.gov/finance/procurement/rfpdocs/2004/June/GoodsAndServices/04-001/A_TCIP_Data_Dictionary.pdf

  B. 1 Transit Bases Information Introduction
  http://www.metrokc.gov/finance/procurement/rfpdocs/2004/June/GoodsAndServices/04-001/B_1_Transit_Bases_Information.pdf

  2 Central Campus
  http://www.metrokc.gov/finance/procurement/rfpdocs/2004/June/GoodsAndServices/04-001/B_2_Central_Campus.pdf

  3 Bellevue Campus
  http://www.metrokc.gov/finance/procurement/rfpdocs/2004/June/GoodsAndServices/04-001/B_3_Bellevue_Campus.pdf

  4 North Base
  http://www.metrokc.gov/finance/procurement/rfpdocs/2004/June/GoodsAndServices/04-001/B_4_North_Base.pdf

  5 South Base and South Training Facility
  http://www.metrokc.gov/finance/procurement/rfpdocs/2004/June/GoodsAndServices/04-001/B_5_South_Base_and_Training_Facility.pdf

C. Interface Control Document
http://www.metrokc.gov/finance/procurement/rfpdocs/2004/June/Goods
AndServices/04-001/C_Interface_Control_Documents_Rev.pdf

D. Security Camera In
http://www.metrokc.gov/finance/procurement/rfpdocs/2004/June/Goods
AndServices/04-001/D_Security_Camera_Interface.pdf

E. TSP Tag Datasheet
http://www.metrokc.gov/finance/procurement/rfpdocs/2004/June/Goods
AndServices/04-001/E_TSP_Tag_Data_Sheet.pdf

F. Current Reporting Requirements
http://www.metrokc.gov/finance/procurement/rfpdocs/2004/June/Goods
AndServices/04-
001/F_Current_Reporting_Requirements_for_Scheduling.pdf

G. Event Log Matrix
http://www.metrokc.gov/finance/procurement/rfpdocs/2004/June/Goods
AndServices/04-001/G_Event_Log_Matrix.pdf

H. DDU Functionality
http://www.metrokc.gov/finance/procurement/rfpdocs/2004/June/Goods
AndServices/04-001/H_DDU_Functionality.pdf

I. Legacy CAD_AVL Sample Reports
http://www.metrokc.gov/finance/procurement/rfpdocs/2004/June/Goods
AndServices/04-001/I_Legacy_CAD_AVL_Sample_Reports.pdf

J. Current CADAVL Technical Environment
http://www.metrokc.gov/finance/procurement/rfpdocs/2004/June/Goods
AndServices/04-001/J_Current_CADAVL_Tech_Environ.pdf

K. OBS & CCS Administrator Toolkits
http://www.metrokc.gov/finance/procurement/rfpdocs/2004/June/Goods
AndServices/04-001/K_OBS_CCS_Toolkits.pdf

L. 4.9 GHz Federal Register Notice
http://www.metrokc.gov/finance/procurement/rfpdocs/2004/June/Goods
AndServices/04-001/L_4_9_GHz_Federal_Register_Notice.pdf

M. Glossary of Terms and Acronyms
http://www.metrokc.gov/finance/procurement/rfpdocs/2004/June/Goods
AndServices/04-001/M_OBS_CCS_Glossary.pdf

A. RFP Invitation

King County, Washington, herein called the County, is soliciting proposals from qualified companies to provide a comprehensive system with all of the following:

- Fully integrated on-board systems functionality.

- A short-range wireless communications and data-management system at the transit operating and training bases.

- An upgrade or replacement for the system for fleet communications, control, automated vehicle location, tracking, monitoring, and data exchange.

The Project will include design, interface development, testing, integration, training, and installation, all in a manner compliant with applicable components of the National Intelligent Transportation Systems (ITS) Architecture.

King County Metro Transit, also called KCM, is the division of the County that will oversee the contract for this system which is hereinafter referred to as the OBS/CCS (On-Board Systems and Communications Center System). The OBS/CCS is to be thoroughly developed and tested by the Awarded Contractor (also referred to as the Contractor) in a planned progression of phases, culminating in fleet-wide implementation and acceptance testing. The OBS/CCS will be required to coordinate and integrate with existing subsystems and interdependent projects such as the Regional Fare Coordination System (RFCS) project and the Transit Radio System (TRS) project. The Contractor

shall design and build, furnish, oversee installation, and provide warranty and maintenance support for the complete OBS/CCS.

A.1. Project Overview

The On-Board Systems & Communications Center Systems (OBS/CCS) Project will replace and upgrade legacy systems and interface to existing systems. Implementation is planned in stages, which are herein called Level 1 and Level 2. The need to accomplish the work in stages is dictated by business requirements to ensure that essential functionality is not degraded as equipment and systems reach the end of their expected life. Also, staged implementations are historically more manageable.

A.2. Project Levels

Level 1 includes procurement and installation of hardware and software for the fleet of approximately 1,400 revenue vehicles to replace, upgrade, and interface to existing on-board systems. Level 1 requires the provision of a Base Operations data-management system which will reside on the King County Wide Area Network (KCWAN). Finally, this level includes the requirement for a Wireless Local Area Network (WLAN) system on board the full fleet of revenue vehicles and at each transit operations base to fully support data-exchange requirements between revenue vehicles and the data management system. The OBS will be required to modify and interface with the driver display, fare transaction processor, and wireless data system to be provided by the Regional Fare Coordination System (RFCS) project contractor.

Level 2 involves either the upgrade or replacement of the legacy CAD/AVL system with a new Communications Center System (CCS). KCM will want to retain existing critical management and reporting functionality with either the upgrade or replacement alternative, and some of that functionality is not common to off-the-shelf CAD/AVL systems. The CCS will be implemented simultaneously with the new Transit Radio System (TRS) to transition from the current 450 MHz radio system to a new 700 MHz radio system. The Transit Radio System will be provided by others.

B. Schedule

Month/Day/Year	Event	Subsection
06/03/2004	Public announcement of Request for Proposals	
06/25/2004	Pre-proposal questions due, in writing	Subsection **1.H.3**
06/30/2004	Pre-proposal conference (time and location)	Subsection **1.H**
08/01/2004	Letter of Intent (optional)	Subsection **1.S**
08/09/2004	Last questions due, in writing	Subsection **1.E**
08/19/2004	Proposals due	Subsection **1.B**
08/23/2004	Evaluation/Negotiation of proposals begins.	Subsection **2**

PROPOSALS NOT WITHIN THE COMPETITIVE RANGE WILL BE ELIMINATED FROM THE SELECTION PROCESS.

* 2nd Quarter 2005   Evaluation/Negotiation complete
* 2nd Quarter 2005   Execute Contract and issue Notice to Proceed

* **NOTE**: Dates preceded by an asterisk are estimated dates. Estimated dates are for information only

C. Inquiries

Inquiries concerning the procurement process shall be directed to the Buyer, Paul Russell at e-mail address: paul.russell@metrokc.gov or at phone (206) 684-1054 or FAX (206) 684-1470 or in writing to the County's Procurement & Contract Services Section, Eighth floor, Exchange Building, Mailstop EXC-FI-0871, 821 Second Avenue, Seattle, WA 98104-1598.

SPECIFIC INQUIRIES DIRECTED TO SOMEONE OTHER THAN THE BUYER SHALL BE GROUNDS FOR DISQUALIFICATION.

D. Mandatory Pre-proposal Conference

A mandatory One Day pre-proposal conference shall be held at **ON JUNE 30, 2004** at location below. Proposals from Proposers who did not attend the mandatory pre-proposal conference shall not be evaluated nor considered for award of a Contract under this RFP. The pre-proposal conference is mandatory because of the nature of the materials, equipment, supplies and/or Services to be Provided. The County has determined that only by attending the pre-proposal conference could a Proposer fully understand the requirements of this RFP.

D.1. Location and Time for Initial Meeting

The mandatory pre-proposal conference will begin at 09:00 a.m. on June 30, 2004, and will be held at a location to be determined within the Seattle metropolitan area. An email update containing meeting location information will be sent to those parties who have informed Paul Russell via e-mail at paul.russell@metrokc.gov of their interest in the RFP.

D.2. List of Attendees

Proposers shall provide Paul Russell at paul.russell@metrokc.gov a list of attendees two business days before the pre-proposal meeting. Due to space constraints, Proposers are requested to limit the number of attendees to four.

1. Proposer—firm
2. Website
3. Attendee Name(s)
4. Title
5. Role in proposal submission
6. Telephone numbers (office, FAX and cell phone) and e-mail contact information
7. Number of box lunches desired (include dietary restrictions if any)

D.3. Submission of Questions Prior to Meeting

Questions, per Subsection **E**, to be reviewed at the pre-proposal meeting need to be submitted at least three business days prior to the meeting via email to Paul Russell at paul.russell@metrokc.gov. Questions received on time will be read at the pre-proposal meeting at which time the County will make an effort to provide informal answers. The County will make an effort to have copies available at the meeting of everyone's questions. Each question should reference a numbered section or paragraph in the RFP. Additional questions are allowed up to the time stated in Subsection **1.E**.

NOTE: Changes or modifications to the RFP will only be done by written Addendum.

D.4. Rules of Meeting

1. Additional questions can be asked only during the meeting time allotted to Questions from Proposers. Any other additional questions that arise during the day must be submitted in writing to the Buyer as described in Subsection **1.G**.
2. Every attendee shall sign in. If your prime Contractor is not represented on the Sign-in sheet you will not be allowed to submit a proposal. Indicate on the Sign-In sheet if you are a subcontractor teaming with another firm. The Contract, if awarded, will only be awarded to a prime Contractor.
3. While informal responses to questions or changes may be given verbally at the Pre-proposal conference, these responses will not change the RFP document. After the Pre-proposal Meeting, an official, written set of responses and/or clarifications will be provided to all attending proposers in the form of an addendum, and will be sent via e-mail.

D.5. Agenda of Meeting:

The preliminary agenda for the pre-proposal conference is as follows:

9:00 a.m.   Sign-in and distribution of handouts including one copy per proposer of KCM's "*The Book: Transit Operating Instructions*"
9:30 a.m.   Introductions, Meeting Agenda, and Procurement Rules

10:00 a.m.   Answers to questions submitted prior to the meeting
11:00 a.m.   Questions from Proposers
Noon   Lunch
1:00 p.m.   Tours:

- Central Base facilities
- KCM vehicles and relevant fleet types
- Current Communications Center and Radio/AVL system (located in the Exchange Building at 821 Second Ave, Seattle)

D.6. Site Visits

The sessions between 9:00 a.m. and Noon, and the tours of the KCM base, vehicles, and the current Communications Center are mandatory and will be conducted as part of the pre-proposal conference. The purpose of these visits is to provide each potential Proposer information on KCM facilities and equipment that will assist in the accurate preparation of costs for the Work.

Appendix G

Event Log Matrix

Part C, Statement of Work   **King County Metro**
Appendices   **OBS/CCS RFP #04-001**
Appendix G,Event Log Matrix

OBS Event Log
Data Fields and Descriptions

	Freq	Data Fields	Description	Terminology
1	All	VID	VehicleID = unique KCM coach no.	
2	All	Operator ID	OperatorID = Unique KCM employee ID	(not currently the same number)
3	All	Block ID	Hastus Block ID	Identify version to be used: GIS, AVL
4	All	Block Route	Route No. used in "Route/Run" block identifier entered at login	
5	All	Block Run	Run No. used in "Route/Run" block identifier entered at login	
6	All	Service Route	Route No. associated with TripID	optional
7	All	Trip ID	Trip number starting at trip 1 - deadhead to first terminal	Identify version to be used: GIS, AVL
8	All	Trip Type	Kind of trip = Revenue Route, Deadhead between service trips, Deadhead to/from base and terminal, Non-Rev: training, maintenance, etc.	0 = None 1 = Dummy 2 = Route:Var Trip 3 = Non-Route:Var Trip
9	All	Dest Sign Text	Route No. and Type displayed on the destination sign, i.e. 5 or 5E	
10	All	Pattern ID	Unique pattern ID from Hastus (includes route, part, service type and direction)	Identify version to be used: GIS, AVL
11	All	Dest Sign Code	Code associated with destination sign display, e.g. 4F=No Passengers	
12	All	Event Type	Category of Event = reason for logging data	0 = Undefined 1 = Operator ID 2 = Distance 3 = Stop 4 = Route 5 = Block ID 6 = Radio 7 = Off Route 8 = On Route 9 = End of Trip 10 = New Trip 11 = APC 12 = Work 13 = Trip 14 = Trigger Point 15 = AVM
13	All	Event Time Stamp	Date and time that the event occurred	time format to be agreed on by users and supported by the databases to be used

14	**All**	**Work Status**	VLU state = not ready, login=known work, Unknown, Corrupt Schedule,	0 = Not Ready 1 = Ready 2 = Unknown Block ID 3 = Corrupt Schedule File 4 = Unkown Error 6 = No Schedule File 8 = No Work or End of Work
15	**All**	**Route Status**	Current status = on, off, end of route/trip, new trip, etc.	0 = Off Route 1 = On Route GPS 2 = On Route Verified 3 = End of Trip 4 = New Trip
16	**All**	**Navigation State**	Relates to Work Status: On = Know work w/schedule; Off = Unknown work or w/o schedule	0 = Navigation Off, No Route Selected or On/Off key set off
17	**All**	**Odometer (ft)**	Odometer reading when the event occurred	1 = Navigation On, Route selected and On/Off key set on
18	**All**	**Latitude**	(WGS 84) (Decimal Degrees)	
19	**All**	**Longitude**	(WGS 84) (Decimal Degrees)	
20	**All**	**Heading**	The compass heading indicating the direction of travel.	
21	**All**	**OBDB Version**	Current on-board DB, e.g. bi-weekly update or re-route edits to Svc. Chg.	
22	**All**	**Service Change**	Service change number from DDB/TED	
23	**All**	**Schedule Type**	Weekday, Saturday, Sunday/Holiday, Partial Holiday, Holiday Plus, Special, etc.	
24	**All**	**Fare Set (optional)**	Default fare set on the fare transaction processor a.k.a. smart card reader	1 = $0(free), 2 = $1.25(1&2 Zone Offpeak) 3 = $1.50 (1 Zone Peak) 4 = $2.00 (2 Zone Peak) 5 = $.25 (Reduced Offpeak) 6 = $.50 (Reduced Peak) 7 = $.75 (Youth)
25	Var	Stop Event Type	Event related to scheduled or unscheduled stop	1 = Scheduled Stop 2 = Additional stop in same zone 3 = UnServiced Scheduled Stop 4 = Unkown Stop
26	Var	Stop ID #	Unique KCM StopPointZone ID	
27	Var	Stop Exit Time (sec)	time exited zone	
28	Var	Stop Speed (ft/sec)	Unserviced Stop = Current speed when entering zone	
29	Var	Stop Status	Missed stop - when a vehicle goes off-route and entirely missed a stop before getting back on route.	
30	Var	Front Pass On	Boardings through front door	

31	Var	Middle Pass On	Boardings through middle door	
32	Var	Rear Pass On	Boardings through rear door	
33	Var	Lift/Ramp Pass On	Boardings via lift or ramp	
34	Var	Front Pass Off	Alightings through front door	
35	Var	Middle Pass Off	Alightings through middle door	
36	Var	Rear Pass Off	Alightings through rear door	
37	Var	Lift/Ramp Pass Off	Alightings via lift or ramp	
38	Var	Passenger Load	Number of passenger on-board at time of event	
39	Var	TimePoint ID	Unique KCM timepoint ID	
40	Var	TimePoint Status	Timepoint - detected or not detected	0 = Timepoint detected 1 = Timepoint not detected
41	Var	Timpoint Entry	Arrival time at a timepoint based on offset distance	
42	Var	Timpoint Exit	Departure time at a timepoint based on offset distance	
43	Var	Schedule Deviation	Measured as leaving the timepoint.	
44	Var	Trigger Point Type	Trigger event related to time & location, e.g. change destination sign, change fare set, etc.	0 = None 1 = Scheduled Timepoint 2 = Dest Sign Change Timepoint 3 = Exterior Announcement Change 4 = Interior Announcement 5 = Fare Set Change 6 = Road Relief
45	Var	Radio Event Type	Data: poll response, CCS login ACK, text msg sent, etc.; Voice: PRTT sent, All Call received, etc.	
46	Var	VLU Message	Messages from OBS system to Operator and/or CCS	
47	Var	Alarm Type	Events characterized as alarms: e.g. EA, AVM "red" status alarm, OBS component health status, etc.	
48	Var	Device ID	Related to Alarm Type: OBS component or AVM system generating the alarm	
49	Var	Capture Camera Flag	Operator initiates security camera system to save digital video for automatic download: EA or "Save Event" button pressed	
50	Var	AVM Event Type	Vehicle system operates outside of threshold: e.g. Battery Strength below lower limit	
51	Var	File Error	Code associated with file type and error type, e.g. corrupt OBDB schedule	
52	Var	Device Error Type	Code associated with OBS device and error type, e.g. Odometer input fault	

OBS Event Log
Event Types

Event Type	Event Type Description	Terminology
0 = Undefined	Unknown event - VLU failure that the system is unable to fit into other category	
1 = Operator ID	New OperatorID	
2 = Distance	Vehicle traveled defined distance w/o event being recorded	
3 = Stop	Vehicle stops & door opens (scheduled or unscheduled) or unserviced stop.	
4 = Route	New Route No. - may not occur with destination sign change	
5 = Block ID	New Login - Route/Run	
6 = Radio	Traffic (voice or data) from vehicle-to-CCS or CCS-to-Vehicle, e.g. radio call, poll response,CCS ACK, text msg.	
7 = Off Route	Change in status from on route to off route	
8 = On Route	Change in status from off route to on route	
9 = End of Trip	Vehicle arrives at end of trip terminal	
10 = New Trip	Vehicle arrives at beginning of trip terminal	
11 = APC	APC signals boarding or alighting detected (only if door open)	
12 = Work	Revenue vs non-revenue; no work scheduled for block on the day entered e.g. holiday schedule	
13 = Trip	Trip number – every trip including deadhead trips should be numbered in sequence.	Same as 10 = new trip?

Event Type	Event Type Description	Terminology
14 = Trigger Point	Event trigger identified by route adherence manager	
15 = AVM	Alarm generated by vehicle system computer (engine, brakes, etc.) e.g. Battery Strength below lower limit	