

Joint Tactical Radio System (JTRS) Standard Device IO Control Application Program Interface (API)



Version: 1.1.1
29 March 2007

Statement A- Approved for public release; distribution is unlimited (29 March 2007)

REVISION HISTORY

Version	Authorization	Description	Last Modified Date
1.0		Initial release ICWG Approved	20-December-2005
1.1		Update outline format ICWG Approved	26-January-2006
1.1.1		Preparation for public release	29-March-2007

Table of Contents

A. DEVICE IO CONTROL 6

Table of Contents

A. DEVICE IO CONTROL	6
A.1 Introduction.....	6
A.1.1 Overview.....	6
A.1.2 Service Layer Description.....	6
A.1.3 Modes of Service.....	6
A.1.4 Service States.....	6
A.1.5 Referenced Documents.....	7
A.1.5.1 Government Documents.....	7
A.1.5.2 Commercial Standards.....	7
A.2 Services.....	8
A.2.1 Provide Services.....	8
A.2.2 Use Services.....	8
A.2.3 Interface Modules.....	8
A.2.3.1 DevIOC	8
A.2.4 Sequence Diagrams	8
A.3 Service Primitives and Attributes	9
A.3.1 DevIOC::DeviceIOControl.....	10
A.3.1.1 <i>enableRTSCTS</i> Operation.....	10
A.3.1.2 <i>setRTS</i> Operation	11
A.4 IDL	12
A.4.1 DeviceIoControl IDL	12
A.5 UML.....	13
Appendix A.A Abbreviations and Acronyms.....	14
Appendix A.B Performance Specification	15

Lists of Figures

FIGURE 1 – DEVICEIOCONTROL INTERFACE CLASS DIAGRAM..... 8

A. DEVICE IO CONTROL

A.1 INTRODUCTION

This document defines a common set of *Device IO Control* interfaces to be used by Joint Tactical Radio (JTR) Set Applications and Services. The *Device IO Control* interfaces provide methods to enable and signal Request To Send (RTS) and Clear To Send (CTS) messages.

The *Device IO Control* interfaces are documented within to minimize coupling between the device and service interfaces that utilize these *Device IO Control* interfaces.

A.1.1 Overview

- a. Section A.1, *Introduction*, contains the introductory material regarding the overview, service layer description, modes, states and referenced documents of this document.
- b. Section A.2, *Services*, provides summary of service interface uses, interface for each device component, port connections, and sequence diagrams.
- c. Section A.3, *Service Primitives and Attributes*, specifies the operations that are provided by *Device IO Control*.
- d. Section A.4, *IDL*.
- e. Section A.5, *UML*.
- f. Appendix A.A, *Abbreviations and Acronyms*.
- g. Appendix A.B, *Performance Specification*.

A.1.2 Service Layer Description

Not applicable.

A.1.3 Modes of Service

Not applicable.

A.1.4 Service States

Not applicable.

A.1.5 Referenced Documents

The following documents of the exact issue shown form a part of this specification to the extent specified herein.

A.1.5.1 Government Documents

A.1.5.1.1 Specifications

A.1.5.1.1.1 Federal Specifications

None

A.1.5.1.1.2 Military Specifications

None

A.1.5.1.2 Other Government Agency Documents

[1] JTRS Standard, "Software Communications Architecture (SCA)," JPEO, Version 2.2.2.

A.1.5.2 Commercial Standards

None

A.2 SERVICES

A.2.1 Provide Services

Not applicable.

A.2.2 Use Services

Not applicable

A.2.3 Interface Modules

A.2.3.1 DevIOC

A.2.3.1.1 DeviceIOControl Interface Description

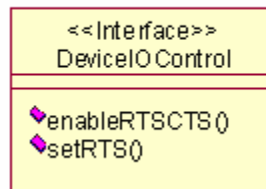


Figure 1 – DeviceIOControl Interface Class Diagram

The interface design of *DeviceIOControl* is shown in Figure 1. It provides the control signals to start the data flow supported the packet consumer derived from this interface.

A.2.4 Sequence Diagrams

None

A.3 SERVICE PRIMITIVES AND ATTRIBUTES

To enhance the readability of this API document and to avoid duplication of data, the type definitions of all structured types (i.e., data types, enumerations, exceptions, and structures) used by the Service Primitives and Attributes have been co-located in section A.5. This cross-reference of types also includes any nested structures in the event of a structure of structures or an array of structures.

A.3.1 DevIOC::DeviceIOControl

A.3.1.1 *enableRTSCTS* Operation

The *enableRTSCTS* operation is used by a packet producer to enable Request To Send (RTS) and Clear To Send (CTS) signals when starting the data flow.

A.3.1.1.1 Synopsis

oneway void enableRTSCTS(in boolean enable);

A.3.1.1.2 Parameters

Parameter Name	Description	Type	Units
enable	TRUE = enable, to enable the RTS and CTS method of flow control. FALSE = disable, to disable the RTS and CTS method of flow control.	boolean	N/A

A.3.1.1.3 State

Not applicable.

A.3.1.1.4 New State

Not applicable.

A.3.1.1.5 Return Value

None

A.3.1.1.6 Originator

Not applicable.

A.3.1.1.7 Exceptions

None

A.3.1.2 *setRTS* Operation

The *setRTS* operation is used by a packet producer to set a Request to Send (RTS) signal when there is data to be pushed. The *setRTS* operation indicates that the Request to Send (RTS) signal has been activated. In most cases this represents a “request to transmit” action, but could also indicate a simple transition on the RTS or CTS signal, as is depending on the sourcing components particular behavior.

A.3.1.2.1 Synopsis

oneway void setRTS(in boolean RTS);

A.3.1.2.2 Parameters

Parameter Name	Description	Type	Units
RTS	TRUE = enable, the I/O Device is ready (able) to send data to the interface. FALSE = disable, the I/O Device is not ready (unable) to send data to the interface.	boolean	N/A

A.3.1.2.3 State

Not applicable.

A.3.1.2.4 New State

Not applicable.

A.3.1.2.5 Return Value

None

A.3.1.2.6 Originator

Not applicable.

A.3.1.2.7 Exceptions

None

A.4 IDL

A.4.1 DeviceIoControl IDL

```
/*
** DeviceIoControl.idl
**/

#ifndef __DEVICEIOCONTROL_DEFINED
#define __DEVICEIOCONTROL_DEFINED

/* DevIOC */

module DevIOC {

    interface DeviceIoControl {
        oneway void enableRTSCTS (
            in boolean enable
        );

        oneway void setRTS (
            in boolean RTS
        );
    };
};

#endif
```

A.5 UML

None

APPENDIX A.A ABBREVIATIONS AND ACRONYMS

API	Application Program Interface
CTS	Clear To Send
ICWG	Interface Control Working Group
IDL	Interface Definition Language
IO	Input/Output
JPEO	Joint Program Executive Office
JTRS	Joint Tactical Radio System
N/A	Not Applicable
RTS	Request To Send
UML	Unified Modeling Language

APPENDIX A.B PERFORMANCE SPECIFICATION

Not Applicable.