

# GAPS-CLOSURE auto-generated xdcomms system model and behavioral specification

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## 1 Introduction

TK. (one sentence)

### 1.1 About xdcomms and the GAPS-CLOSURE project

TK.

### 1.2 About this document

TK.

## 2 Summary

TK. (one sentence)

### 2.1 High-level overview of xdcomms auto-generation

TK.

### 2.2 Goals of xdcomms design and implementation

TK.

## **3 Information Model**

TK. (describe section)

### **3.1 Summary diagram**

TK. (a UML diagram)

### **3.2 Primitives and Aliases**

TK. (describe subsection)

### **3.3 Cross-domain data format**

TK. (describe subsection)

#### **3.3.1 Data**

TK.

#### **3.3.2 The Marshalled datatype**

TK.

#### **3.3.3 The Serialized datatype**

TK.

### **3.4 The hardware interface**

TK. (describe subsection)

#### **3.4.1 The HALConfig class**

TK.

### **3.4.2 The Device class**

TK.

### **3.4.3 The Codec class**

TK.

## **3.5 The network interface**

TK. (describe subsection)

### **3.5.1 The Binding datatype**

TK.

### **3.5.2 The XDContext datatype**

TK.

### **3.5.3 The Wrapper class**

TK.

### **3.5.4 The Handler class**

TK.

## **4 Application model**

TK. (describe section)

### **4.1 The MasterSequence class**

TK.

## **4.2 The EventQueue class**

TK.

## **4.3 The RPCTransaction class**

TK.

## **4.4 The HAL class**

TK.

## **4.5 The App class**

TK.

## **4.6 The AppThread**

TK.

# **5 Behavioral specification**

TK. (describe section)

## **5.1 Control flow**

TK. (should include both an english description and detailed diagrams)

## **5.2 Function-level contracts**

TK. (go function by function)

## 6 Whole-system correctness properties and associated proofs

TK. (describe section)