

Georgia Tech Sponsored Research

Project	C-36-W73
Project director	Schwans Karsten
Research unit	Computing
Title	IR-DOMS Project (SBIR) Phase II
Project date	9/30/1998

Final Report on Phase II SBIR ORB-IT Project Subcontract

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This final report summarizes the work performed at Georgia Tech under subcontract from Systran Corporation from April 1, 1998 to September 30, 1998.

- Georgia Tech has demonstrated the ability of our high performance object request broker (OTL) to interact with standard ORBS via IIOP and RMI. An example program demonstrating this ability is available at <http://www.cc.gatech.edu/systems/projects/MOSS/objent.tar.gz>. This program contains multiple objects, some of are "objents" which demonstrated a modal existence. In agent mode, these objects keep and maintain their state in Java and could be easily relocated in a distributed system. In object mode, they keep their state in C-style OTL objects and are more efficient. In either mode they can make and receive invocations via OTL, IIOP or Java RMI. The application runs with the Sun Java Development Kit 1.2b3. IIOP operation was tested via interoperation with the ILU orb from Xerox PARC.
- Georgia Tech has also augmented our ORB to provide for raising a CORBA run-time exception when an invocation refers to a process (and thus object) that no longer exists. This functionality is demonstrated in the file `idl2otl/examples/naming/obj_client.c`. In particular, if the associated `obj_server` process is killed prior to invoking `obj_client`, the `example_getSum()` invocation will return a standard `CORBA.COMM.FAILURE` exception. While this simple application demonstrates handling this exception by printing an error message, a more

elaborate application might emulate the functionality of the CORBA Lifecycle Services by restarting the missing object, reloading stored object state from disk and rewriting the object reference to refer to the new object.

- Additionally, Georgia Tech has provided ongoing bug fixes and enhancements to its basic ORB and IDL compiler.

The ORB-core and other software is available to Systran at URL:
<ftp://ftp.cc.gatech.edu/pub/groups/systems/chaos/MOSS/MOSS-1.0.tar.Z>