

PACKAGE ID - 001165SGIIP00 ICERVS

KWIC TITLE - Interactive Computer-Enhanced Remoted Viewing
System

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LIMITATION CODE -UNL **AUDIENCE CODE** - UNL

COMPLETION DATE - 09/01/1996 **PUBLICATION DATE** - 05/01/1996

DESCRIPTION - ICERVS (pronounced EYE-serves) is a 3-D visualization software that works with both discrete data, such as acquired from dimensional mapping sensors, and surface model data used in CAD, providing an integrated 3-D (hidden surface) display. ICERVS can display multiple view windows with either external or immersive viewers, and includes visualization features such as cutplanes, color and visibility control, and region selection/highlighting. ICERVS view windows also include graphical tools to allow interactive editing of geometric primitives such as spheres, cones, cylinders, and polyhedral objects. By integrating discrete and surface data representations, ICERVS can be used in applications, e.g., where a CAD model is being constructed or modified to match objects or other geometric features shown in discrete sensor data. Non-scalar data such as images can also be attached to spatially-located indicators for inclusion in the ICERVS display. ICERVS provides an integrated operating environment with a graphical user interface running X11 Windows. Users can organize their data into ICERVS datasets which may include discrete data, geometric objects, and non-scalar data. Discrete data consists of XYZ points, and attached to each point can also be set of calar property values. Geometric objects may include basic primitives plus composite objects. Non-scalar data are user defined data types that can be attached to a specific XYZ location. These data are displayed with a spherical indicator, which when selected invoke a user defined viewer for the specific data type.

PACKAGE CONTENTS - Source Media Directory; Executable Media Directory; Software Abstract; Compilation and Linking Instructions; ICERVS Release Notes; Installation Guide & User Manual; Media Includes Source Code, User Guide in HTML Format, Executable Module, Compilation Instructions, Linking Instructions, Sample Problem Input Data;

SOURCE CODE INCLUDED? - Yes

MEDIA QUANTITY - 1 CD Rom

METHOD OF SOLUTION - ICERVS utilizes two computer graphic software libraries to provide its primary internal functionality. The

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METHOD OF SOLUTION - (CONT) first, Octree Corporation's TrueSolid library provides a volumetric database for storage and management of discrete data. The database is hierarchial, and spatially organized for fast data access and analysis. It also uses less computer memory than more conventional methods such as uniform grids of triangle networks. The second software library is the Silicon graphics Open Inventor geometry library, which provides visualization and modeling. Visualization is provided by a set of 3-D conventional and immersive viewers, and geometric modeling is provided by a set of graphical manipulators, menus and control panels. For display, discrete data is rendered as a cloud of points and geometric data can be rendered in wireframe, surface shaded, or semi-transparent modes. ICERVS capabilities are brought together under a graphical user interface based on X11 Windows. A menu system with control panels and display windows provides user access to ICERVS features.

COMPUTER - SILICON GRAPHIC

OPERATING SYSTEMS - IRIX 5.3

PROGRAMMING LANGUAGES - C++

SOFTWARE LIMITATIONS - Each database may contain a maximum of 65,535 objects. Although the number of discrete data points in each dataset is limited, each point can include a maximum of 15 attached scalar property values. Each dataset may contain a maximum of 65,535 (user defined) non-scalar data items.

SOURCE CODE AVAILABLE (Y/N) - Y

ABSTRACT STATUS - Released AS-IS 2/18/98

SUBJECT CLASS CODE - T

KEYWORDS -

COMPUTER PROGRAM DOCUMENTATION
I CODES
COMPUTER CALCULATIONS

EDB SUBJECT CATEGORIES -
990200

SPONSOR - DOE/FE

PACKAGE TYPE - AS - IS