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Identification

Ring 0 Communication Segment
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Introduction

A data segment with pointers to the various other data segments in ring 0 is created for use by the XRAY system (BW.2) in debugging Multics after the system is stopped, or by the Graphic Display Monitoring System (BW.3) which uses the XRAY GIOC program while Multics is in operation.

Method

xray_communications is an EPLBSA segment consisting of links to the following segments or external reference points:

cat_seg	(GIM data base)
cormap	(core map segment)
gim_abs_seg	(GIOC buffers)
kst_seg	(known segment table)
mmct	(major module configuration table)
pds	(process data segment)
pdf	(processor data segment)
prds	(processor data segment)
scas	(system controller addressing segment)
scs	(system communication segment)
smt	(segment meter table)
status_seg	(status queues for GIOC)
tc_data	(traffic controller data segment)
tc_data\$apt_ptr	(pointer to Active Process Table in tc_data)

"Segdefs" are included so that each pointer can be referenced externally by inclusion of a declaration of the form:

```
declare xray_communications$x external pointer;
```

where "x" is the name of the segment to which the pointer points. (In the case of tc_data\$apt_ptr, "x" should be "tc_data_apt".)

The segment is loaded and prelinked early in the Multics initialization process so that its segment number in the ring 0 wired-down descriptor segment is the same from bootload to bootload. In this way, the user need only know one segment number to obtain easy access to all ring 0 data segments. (He must, however, know the proper offsets within the segments.)