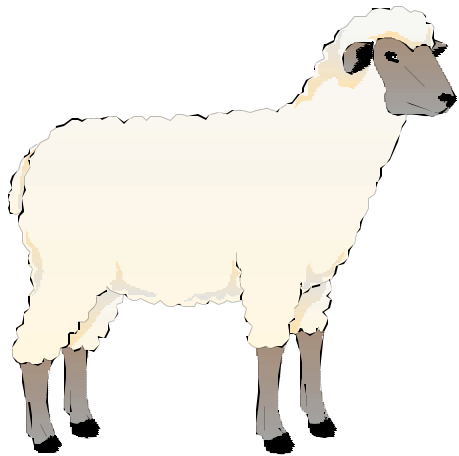
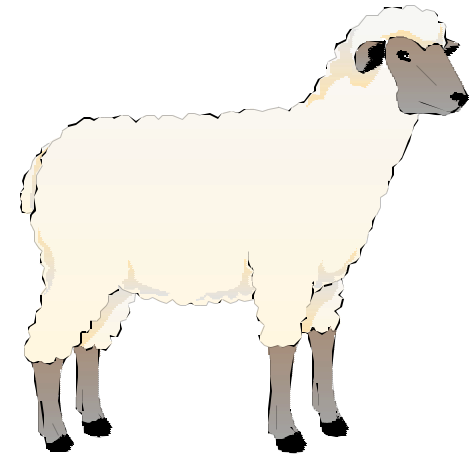


Do You Really Want a Clone?



Paul Higgins - Intria-HP



IMS Technical Conference

Miami Beach, FL

October 22-25, 2001

About Us

- CIBC - Large Canadian Bank
 - 12 Million+ IMS trans/day
 - 300 PHTPS
- Intria - wholly owned subsidiary
 - 5300+ Employees
- Intria-HP - joint venture CIBC + HP
 - Technology Services Provider
 - 1200+ computer professionals

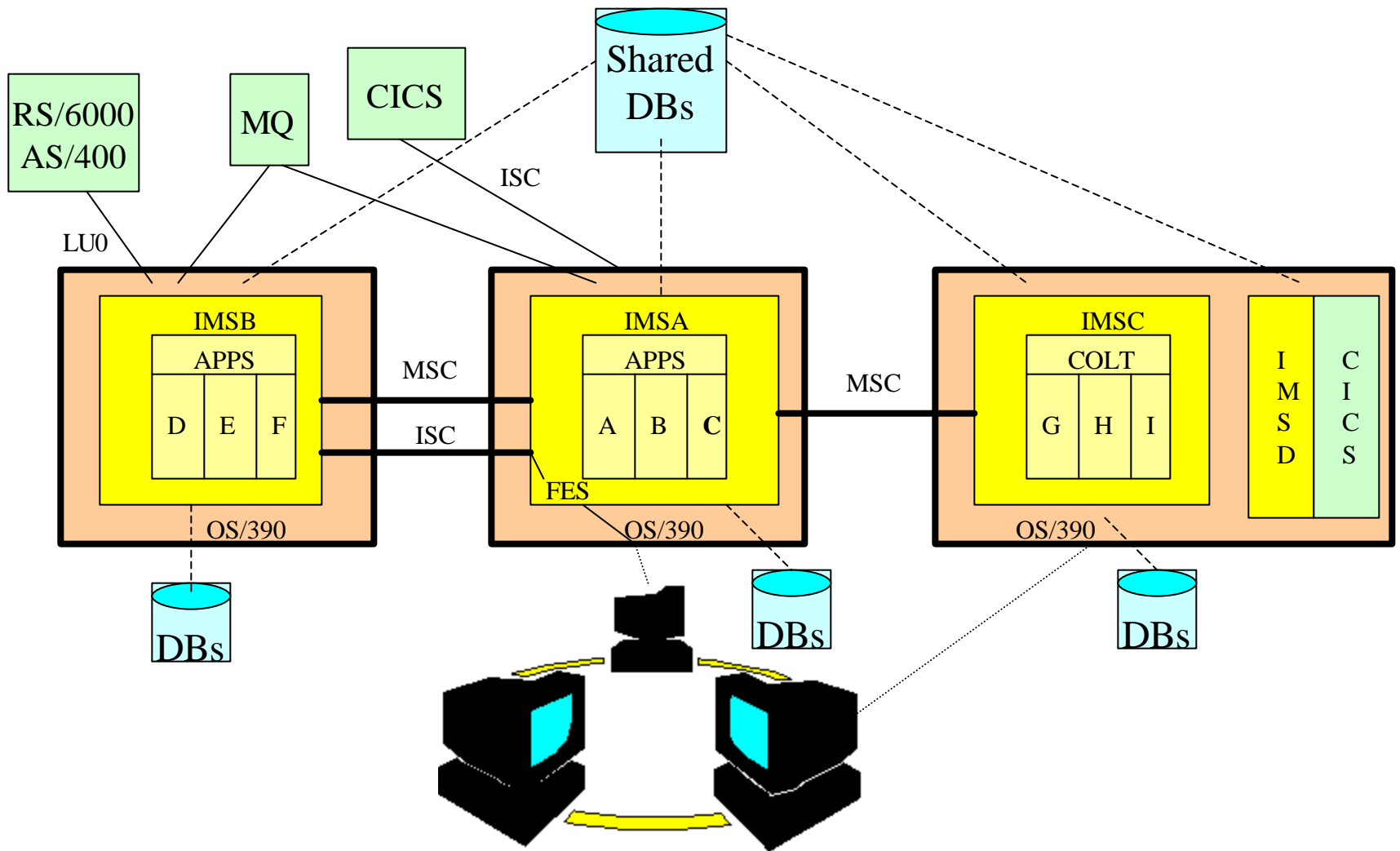


The Requirement

- Provide “true” 24/7 for CIF application
- Many Interfaces need 24/7:
 - PC Banking (via MQ)
 - Telephone Banking (SLUP)
 - Fraud Detection (SLUP)
- No Changes to other applications



IMS Production Before Cloning

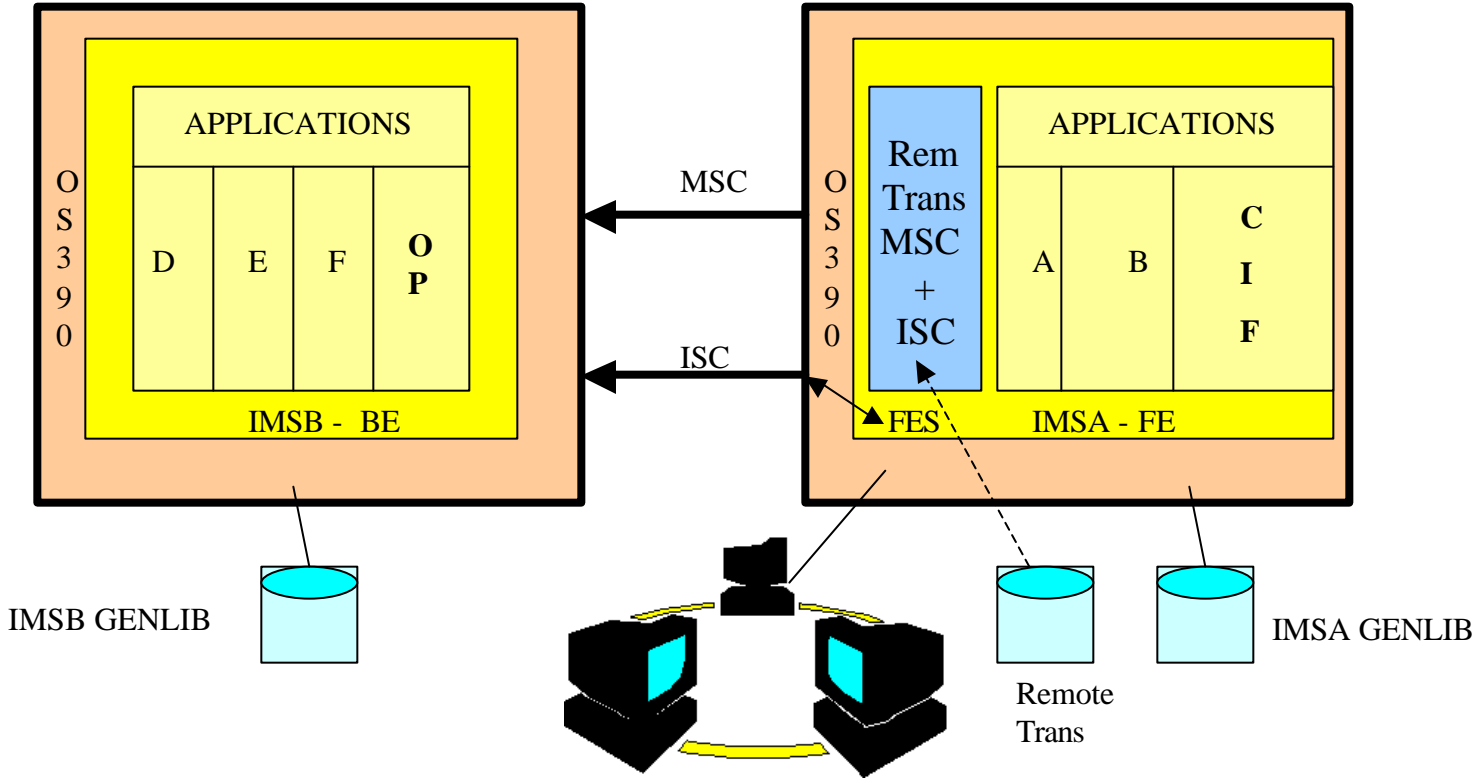


To Get There

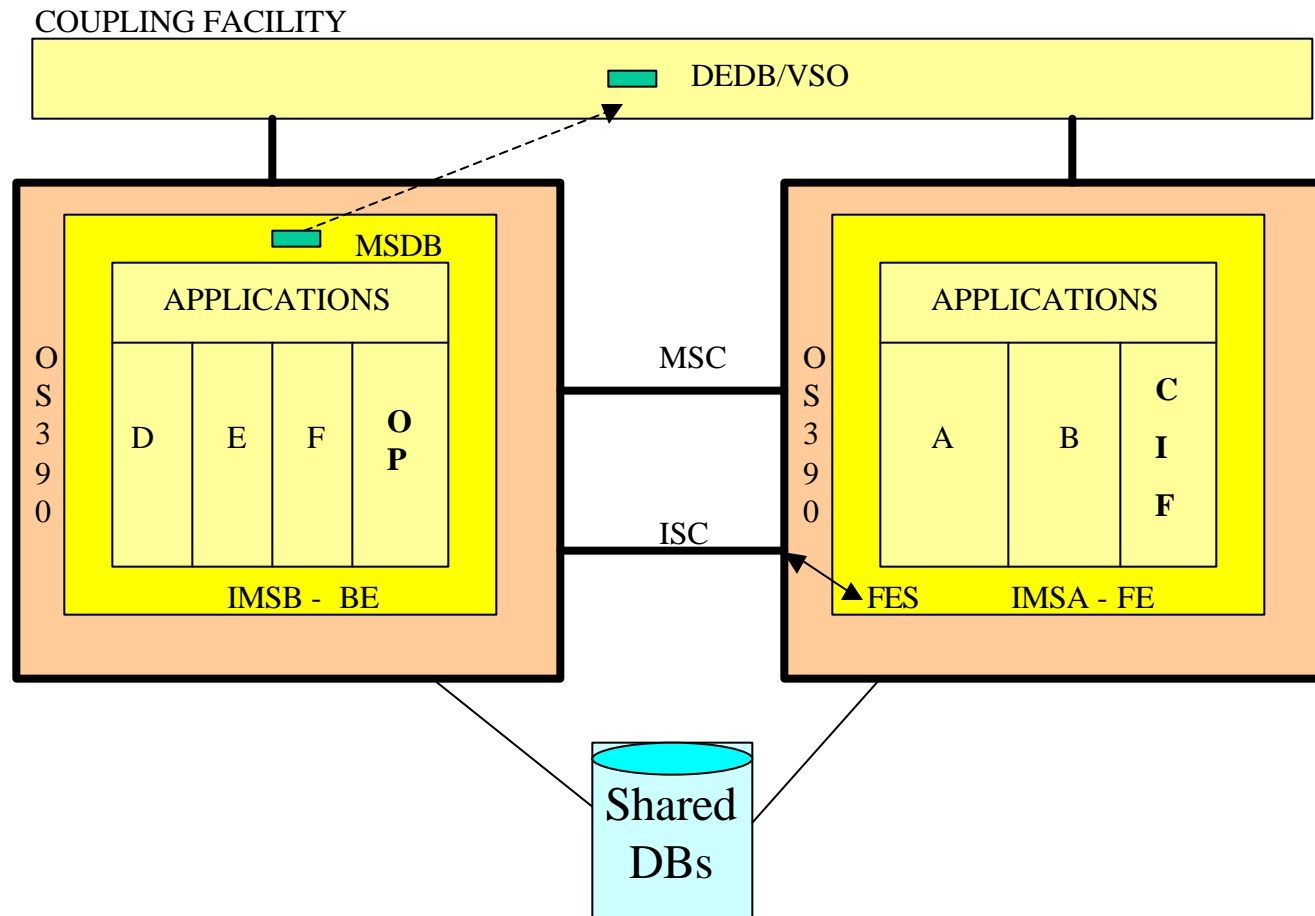
- Three Environments: TPNS, DEV, PROD
- Phased Implementation:
 - 1 Convert MSDBs to DEDB/VSO
 - 2 Make Transactions Classes Unique
 - 3 Implement Shared Queues
 - 4 Merge IMS GENS (Application macros)
 - 5 Merge ACBLIBS, MDASLIB, RMDLIB
 - 6 Implement VGR



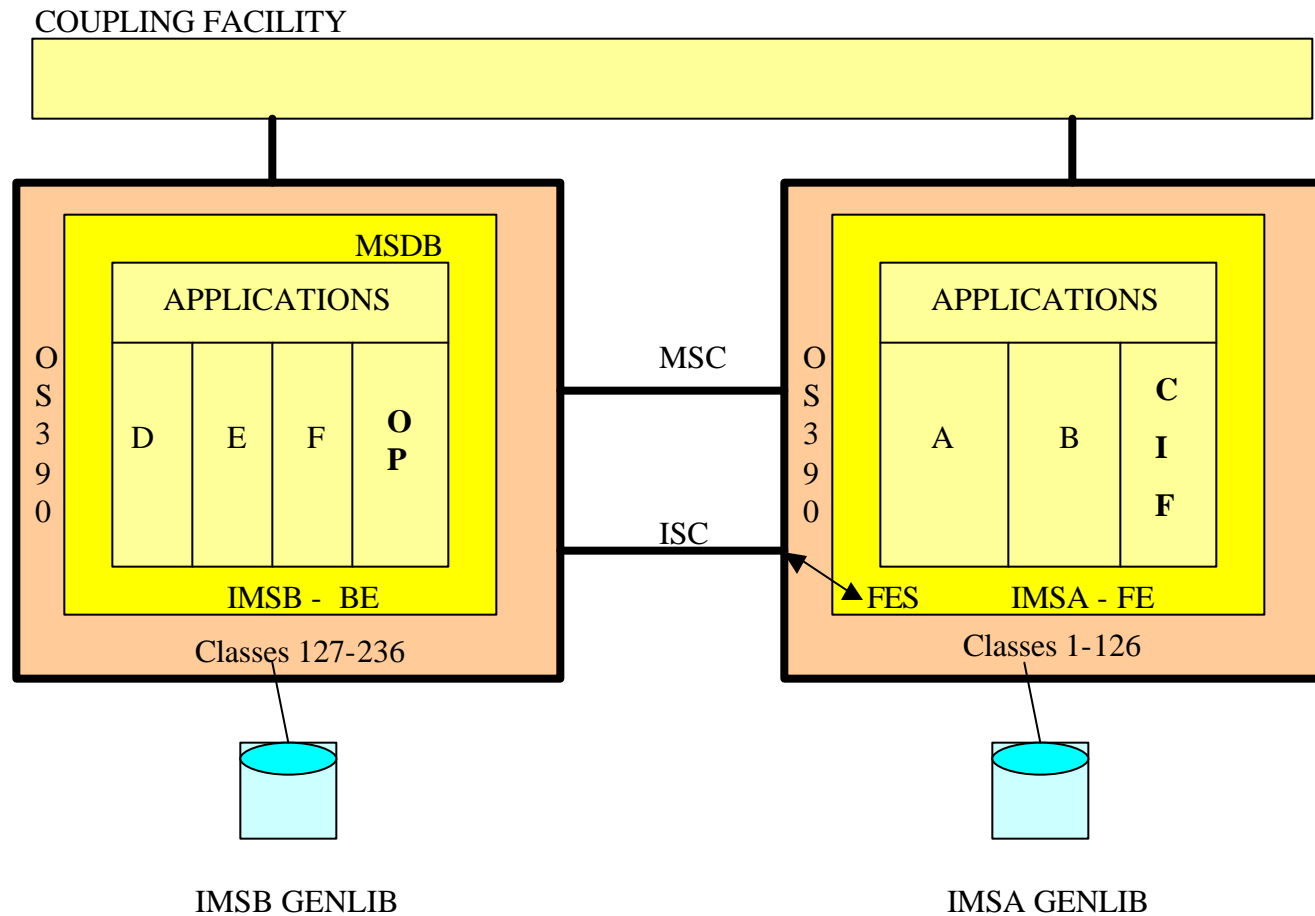
Production Before Shared Queues



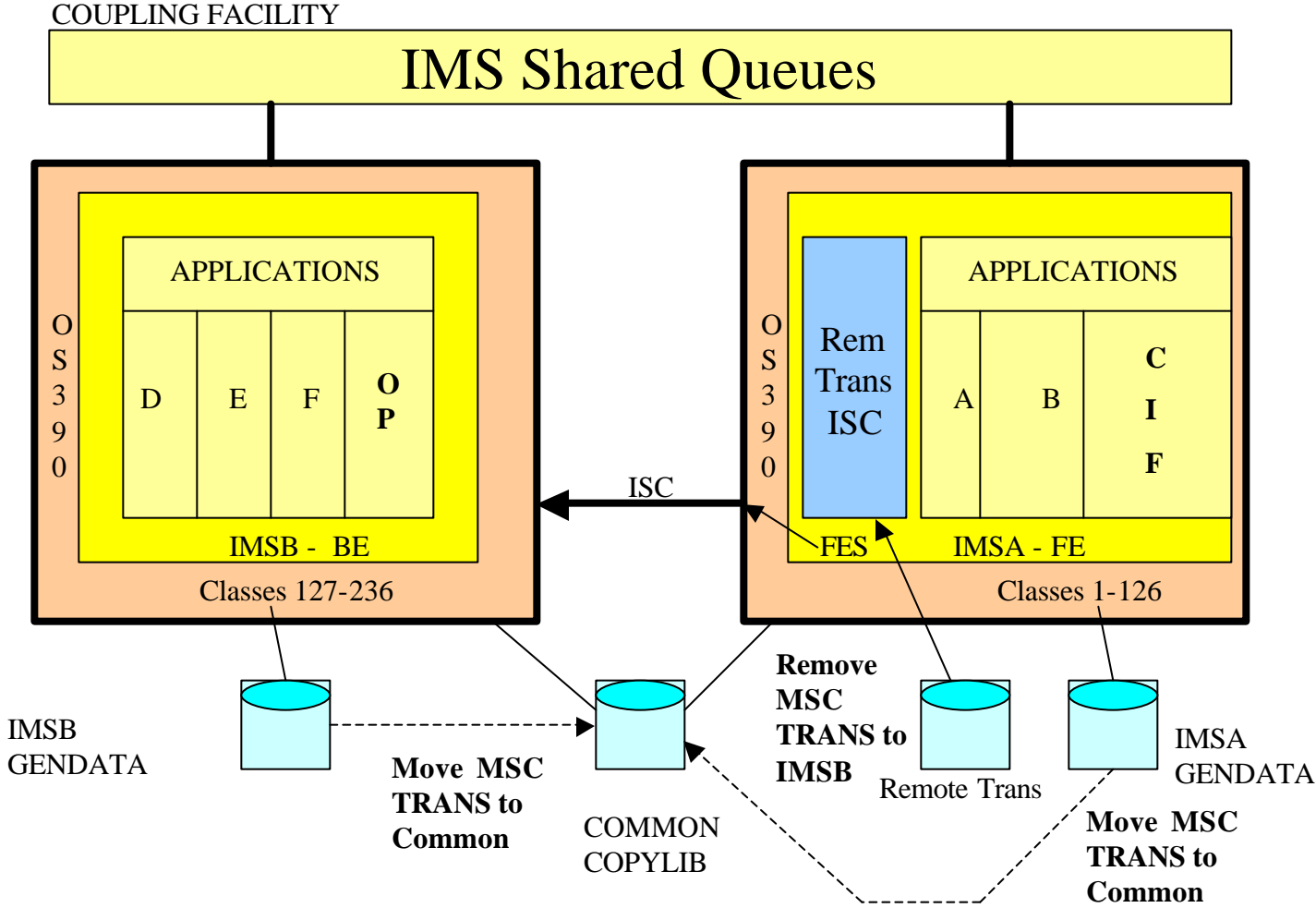
Convert MSDBs to DEDB/VSO



Make Transaction Classes Unique



Implement Shared Queues

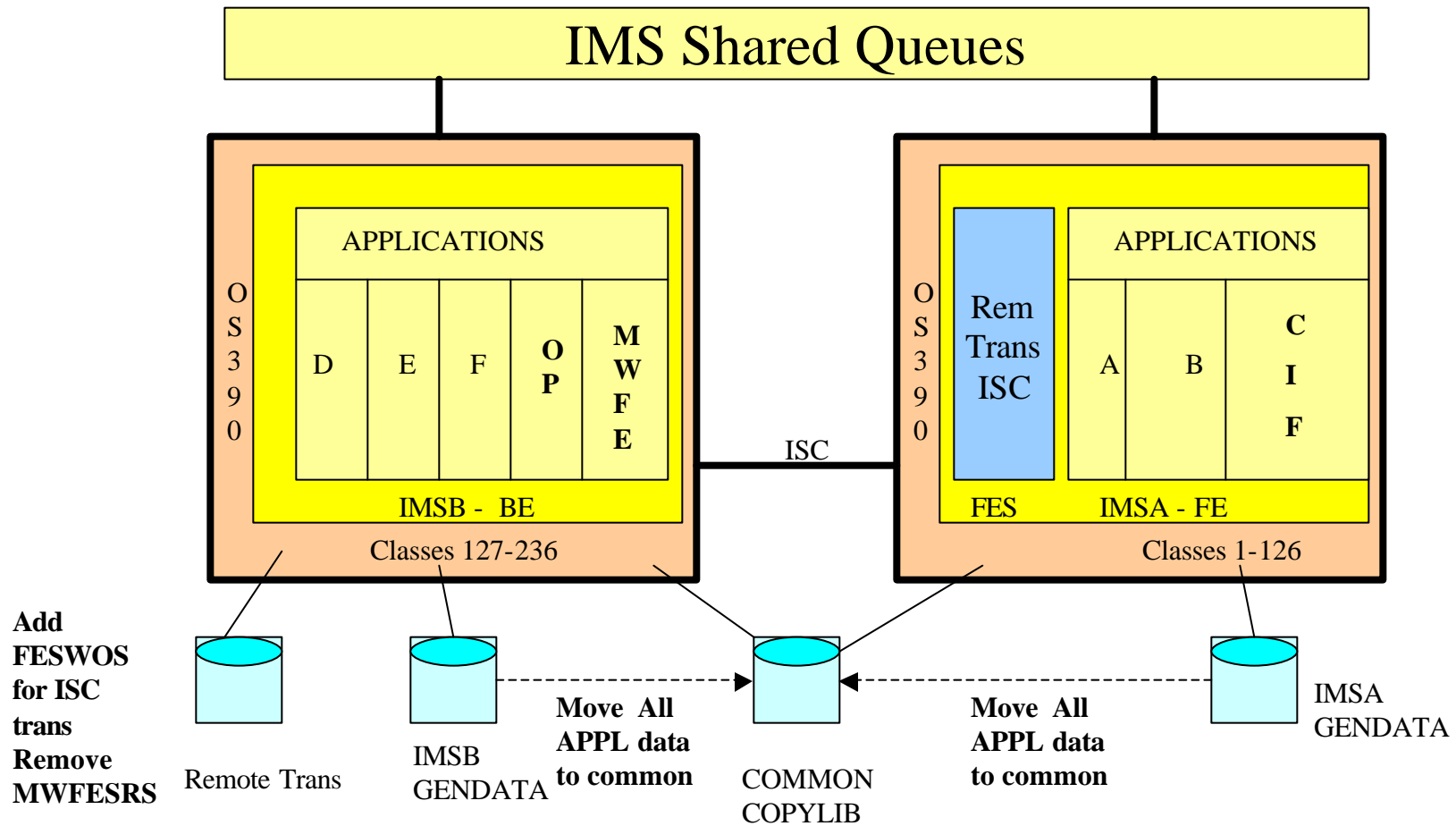


Implement Shared Queues...

- Terminals still on FE-IMS
- Gen BE -IMS Remote Transactions on FE-IMS
 - will still run on BE-IMS because of unique classes and no regions to process on FE-IMS
- All Non_FES transactions now go through the SQ
- Unable to eliminate FES (ISC)



Merge IMS GENS + MWFES

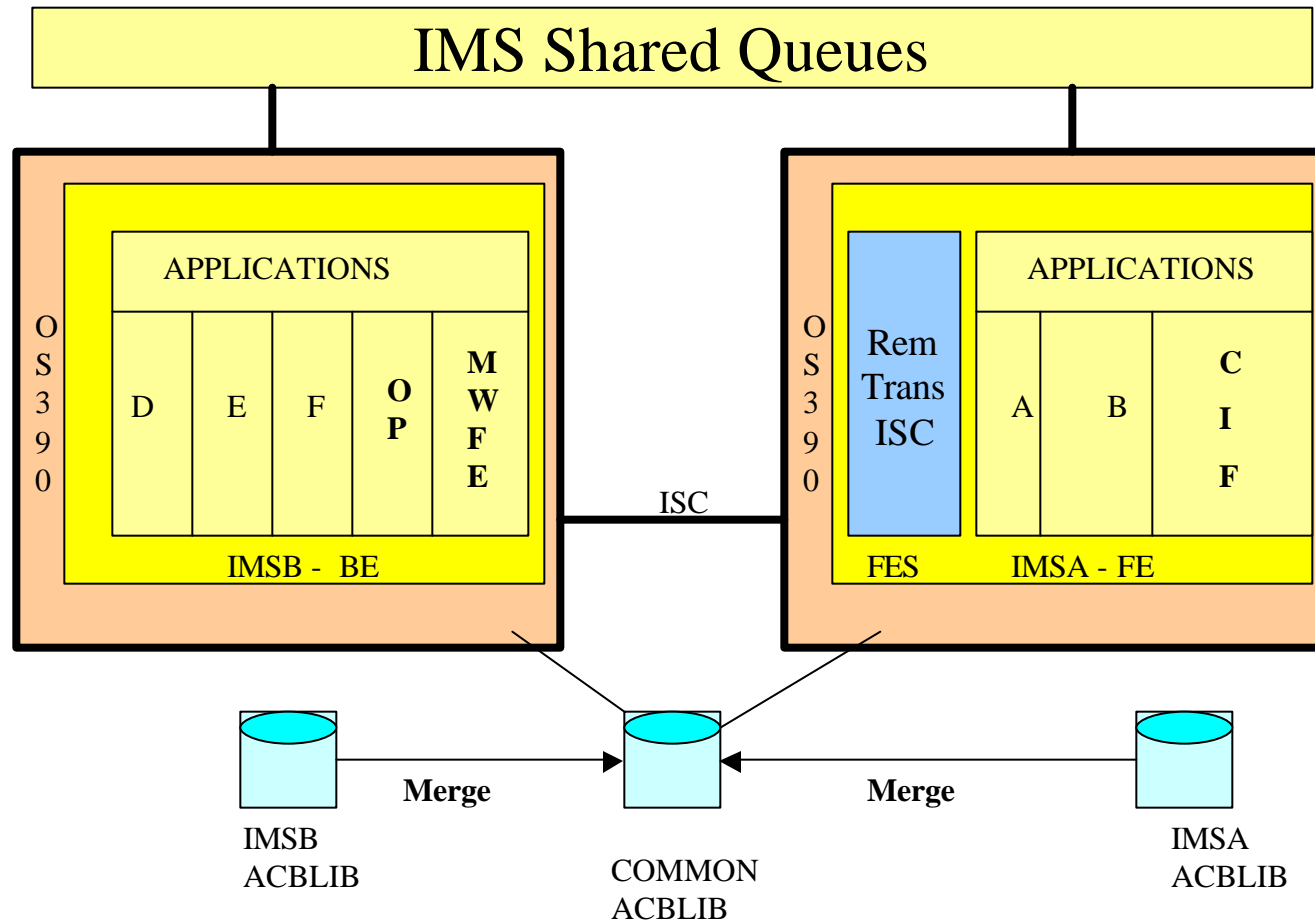


CLONE CIF/OP...

- Move Application Macros to common library
 - all APPLCTN, TRANSACT, DATABASE genned to both systems
 - Also common SMU security data
- Added new applications MWFE to handle responses for FES (explained later)



Merge ACBLIBS, etc

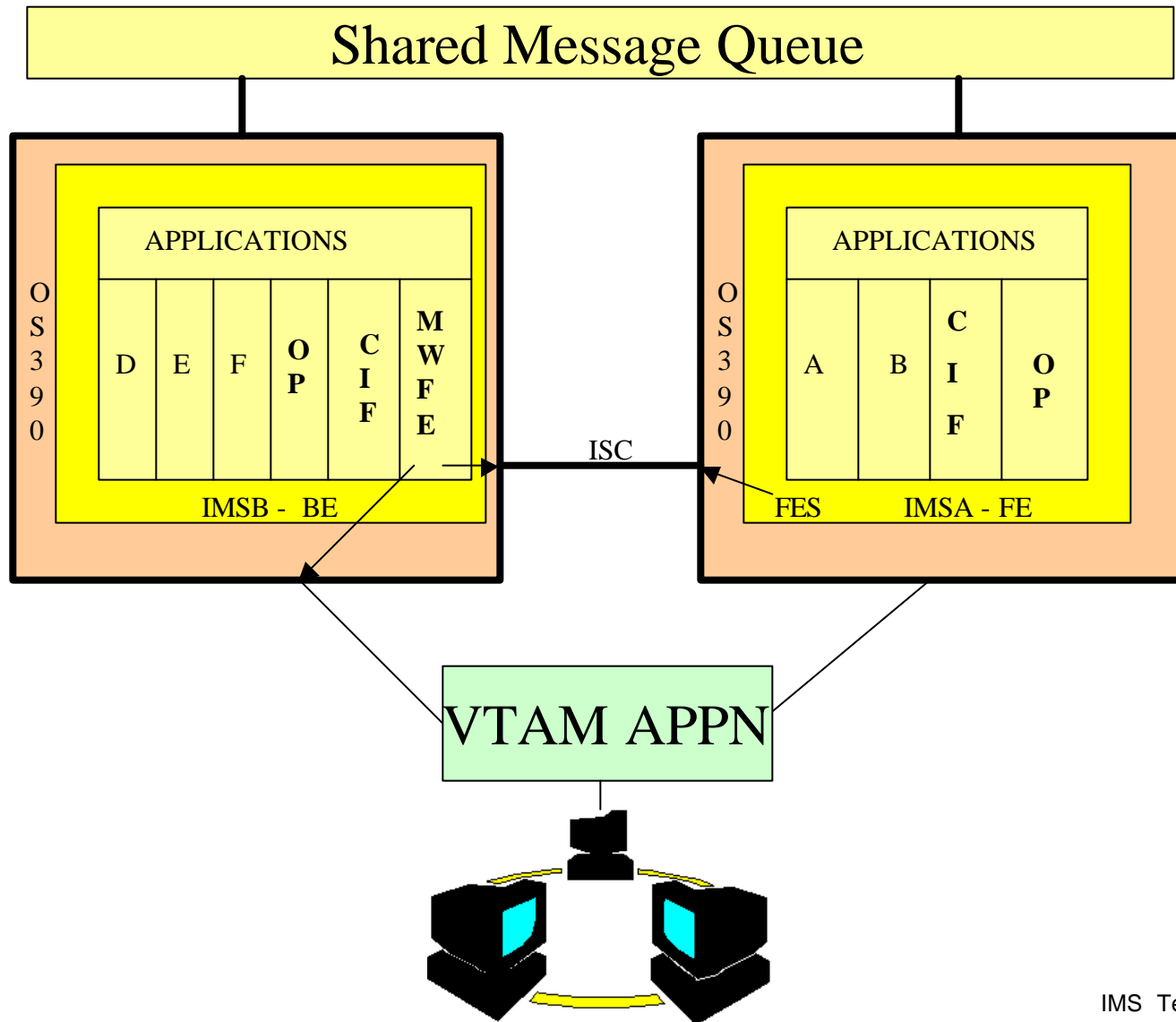


Merge ACBLIBS etc

- New common ACBLIB, MDALIB and RMDLIB allocated
- Merge in existing data both systems
- Create alias for old dataset name to new common dataset name (only development)
- Unique MDA members put in RESLIB (OLDS, WADS, MONITOR)



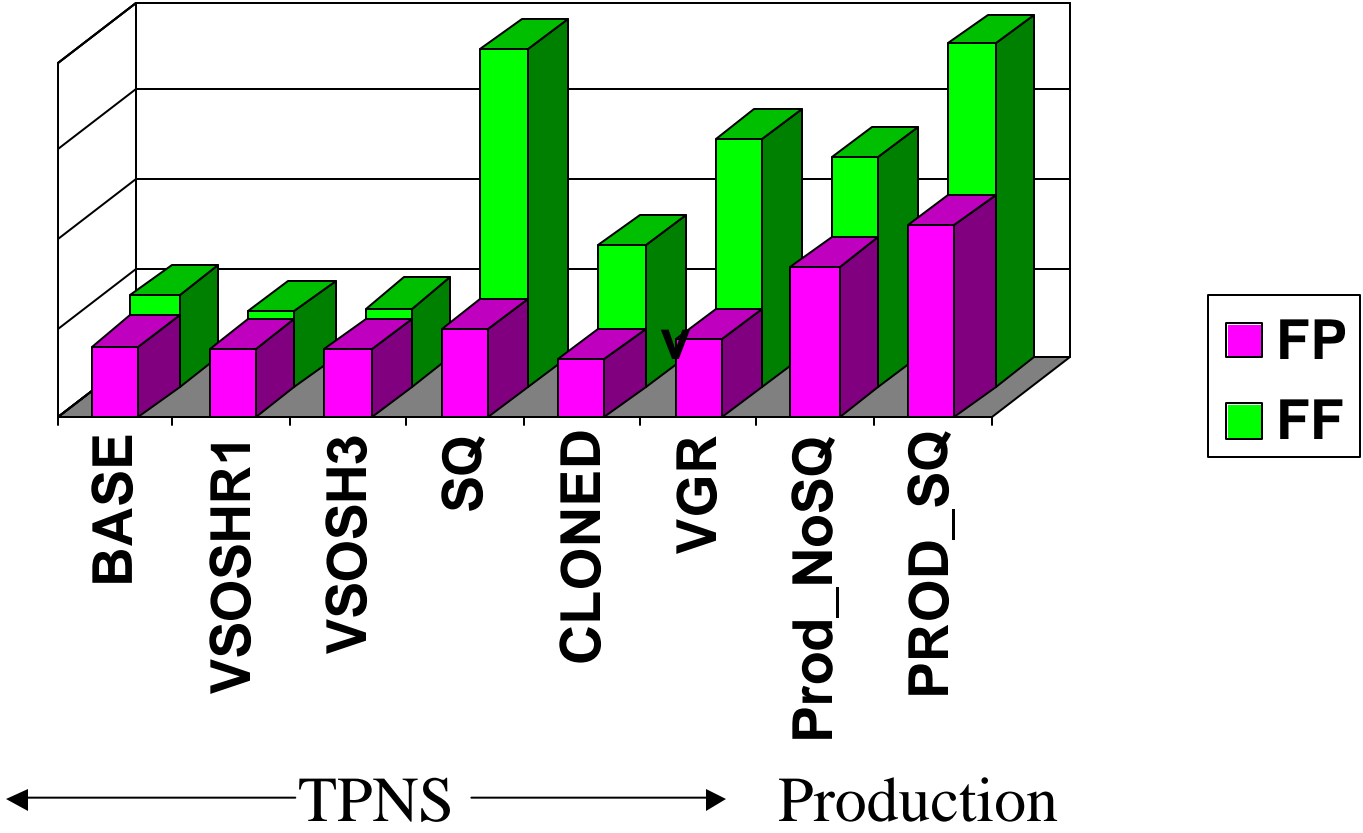
Implement VGR



Implement VGR...

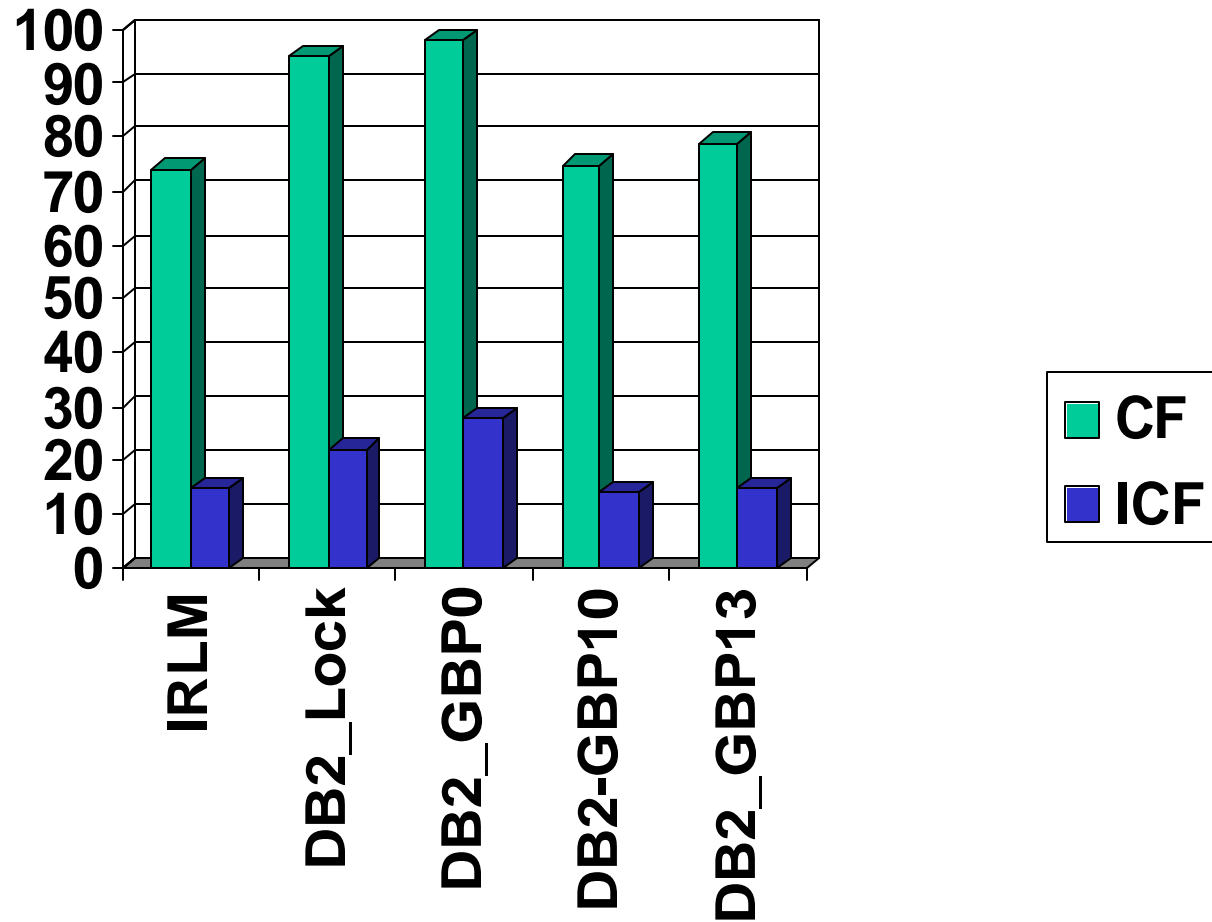
- Clone CIF (68) and OP (18) regions
- VTAM APPN installed + IMS VGR activated (GRAFFIN=VTAM)
- Terminals that need cloning will use a generic applid
- MWFE will handle FES transactions entered on either IMS

Transaction Response

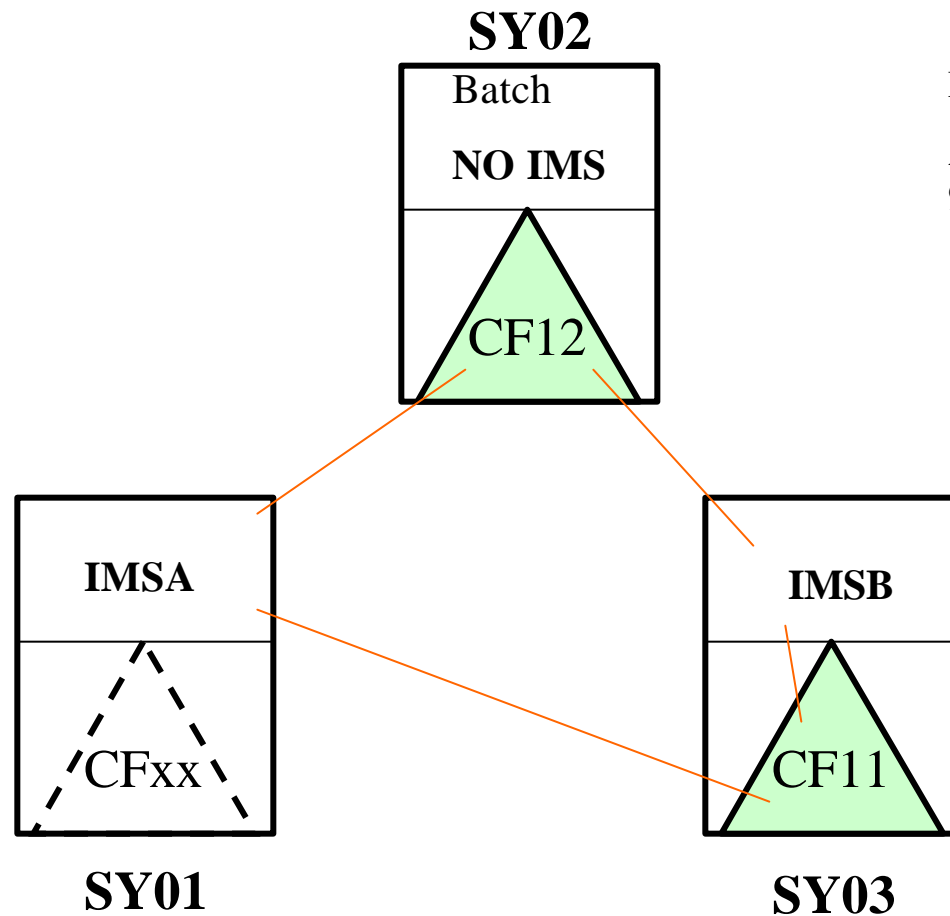


Production

Coupling Facility Response (usec)



Internal Coupling Facilities



Note:

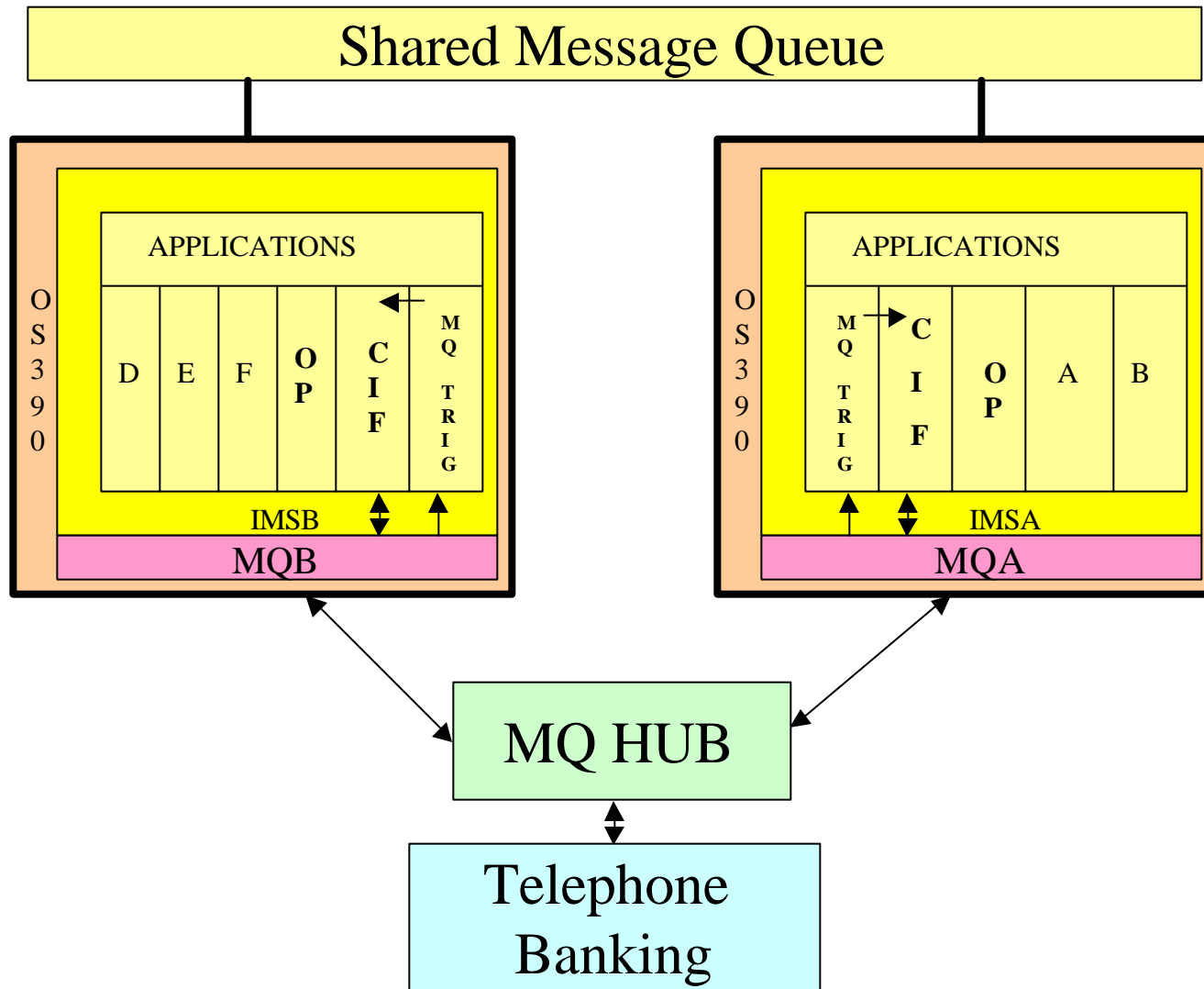
All CECs:
9672-X47

SQ Structure Information

- MSGQ: 20M/40M
- MSGQ OVERFLOW: 14M/28M
- EMHQ: 20M/40M
- EMHQ OVERFLOW: 14M/28M
- MSGQ LOG: 135M
- EMHQ LOG: 135M



MQ Solution



MQ Solution...

- Telephone Banking Transactions sends transactions to MQ Hub
- MQ Hub alternately sends transactions to IMSA and IMSB
- MQ uses trigger BMP to schedule IMS transactions to get MQ transaction, process and then respond.

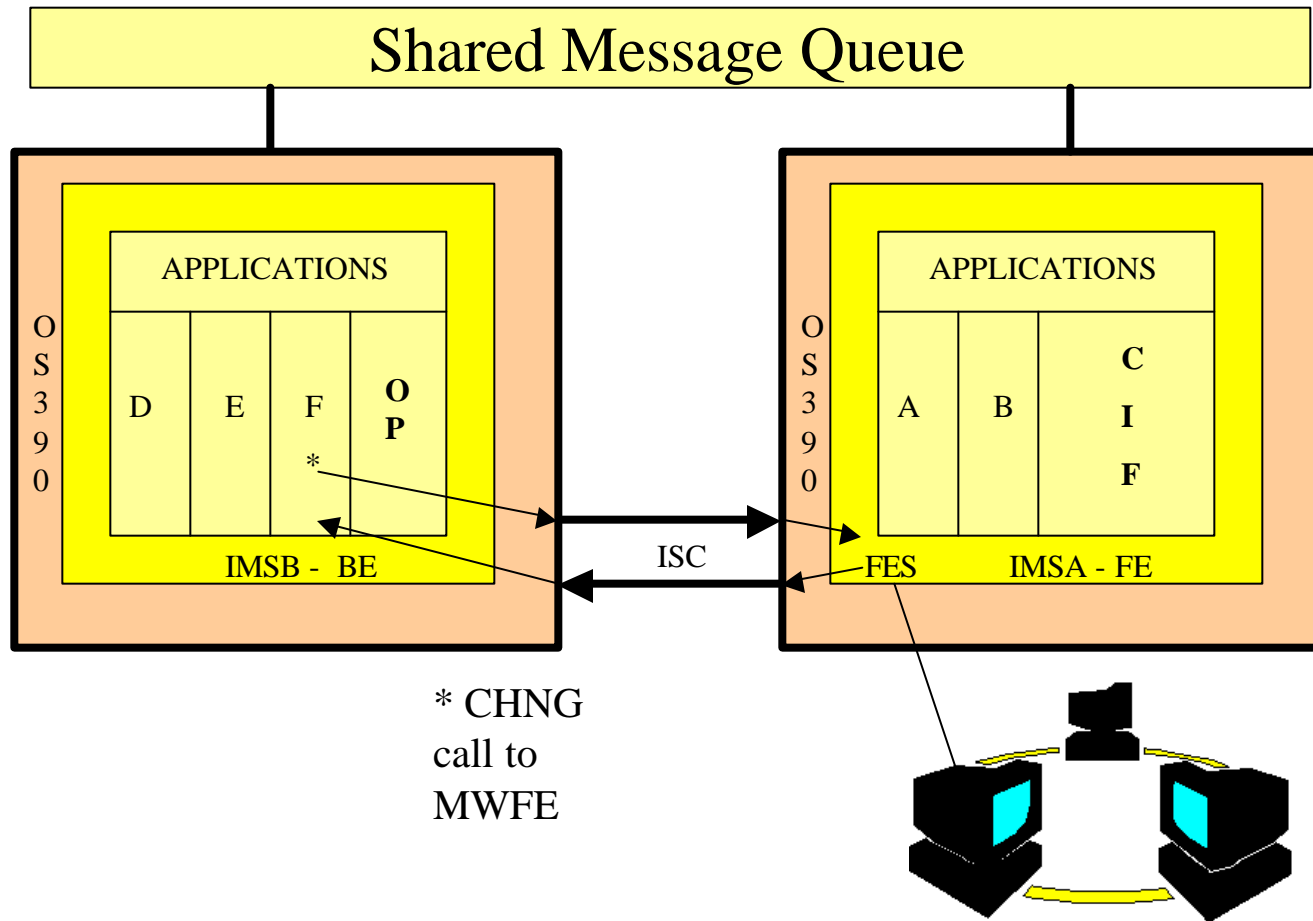


Some Challenges

- FrontEnd Switch (FES) transactions
- Performance of Shared Queues
 - MVS Logger
- Duplicate LTERMS
- The Last Y2K BUG?
- Communications



Frontend Switch



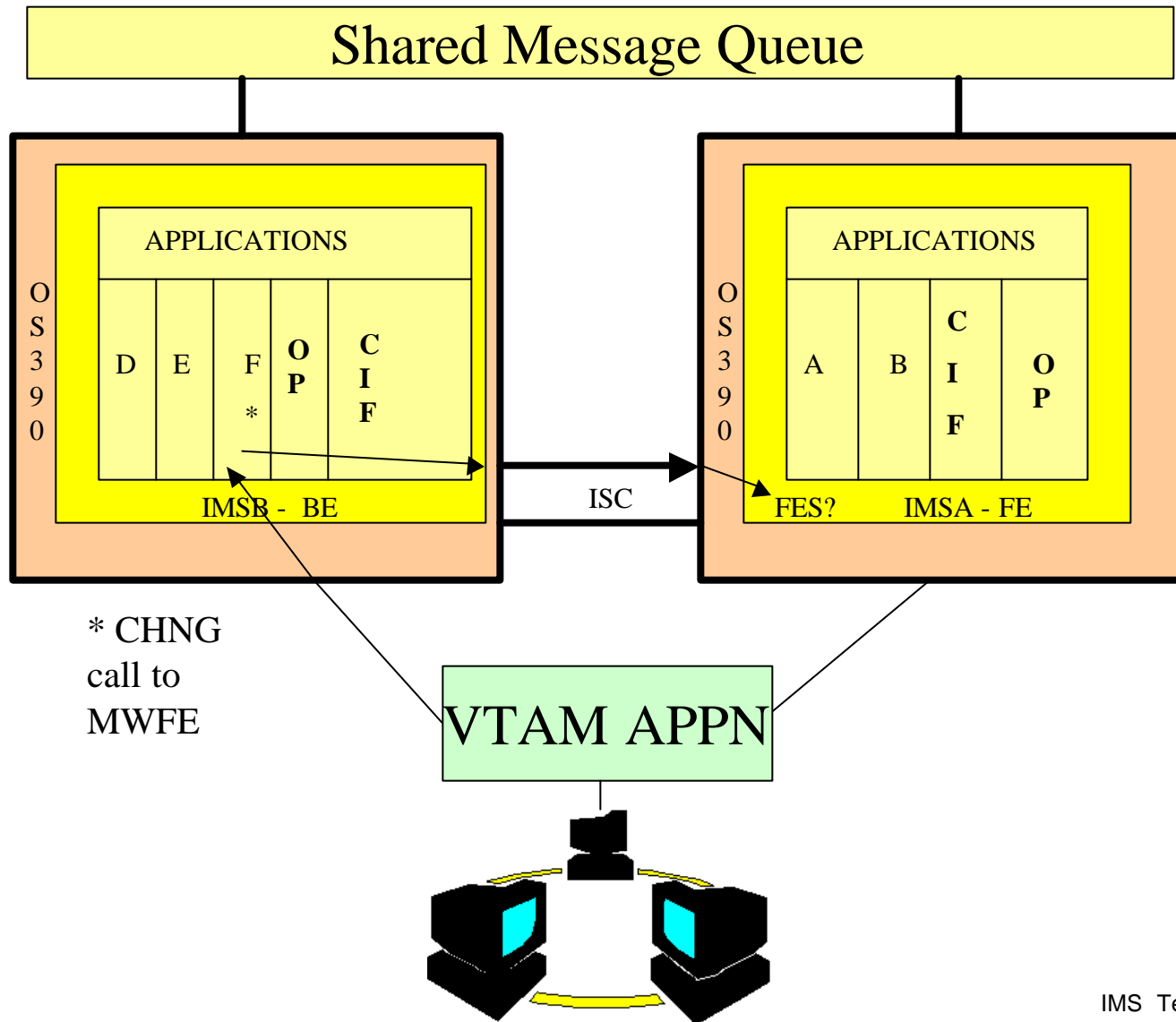
* CHNG
call to
MWFE

Frontend Switch

- Keeps terminal in response mode
- Puts Unique ID on each transaction
- Provides Timeout and Late Message
- When response received from any LU, if Unique ID is present, tells IMS to send this as response to original terminal.
- Applications respond to MWFES
 - Exit changes to ISC LTERM



Frontend Switch Problem

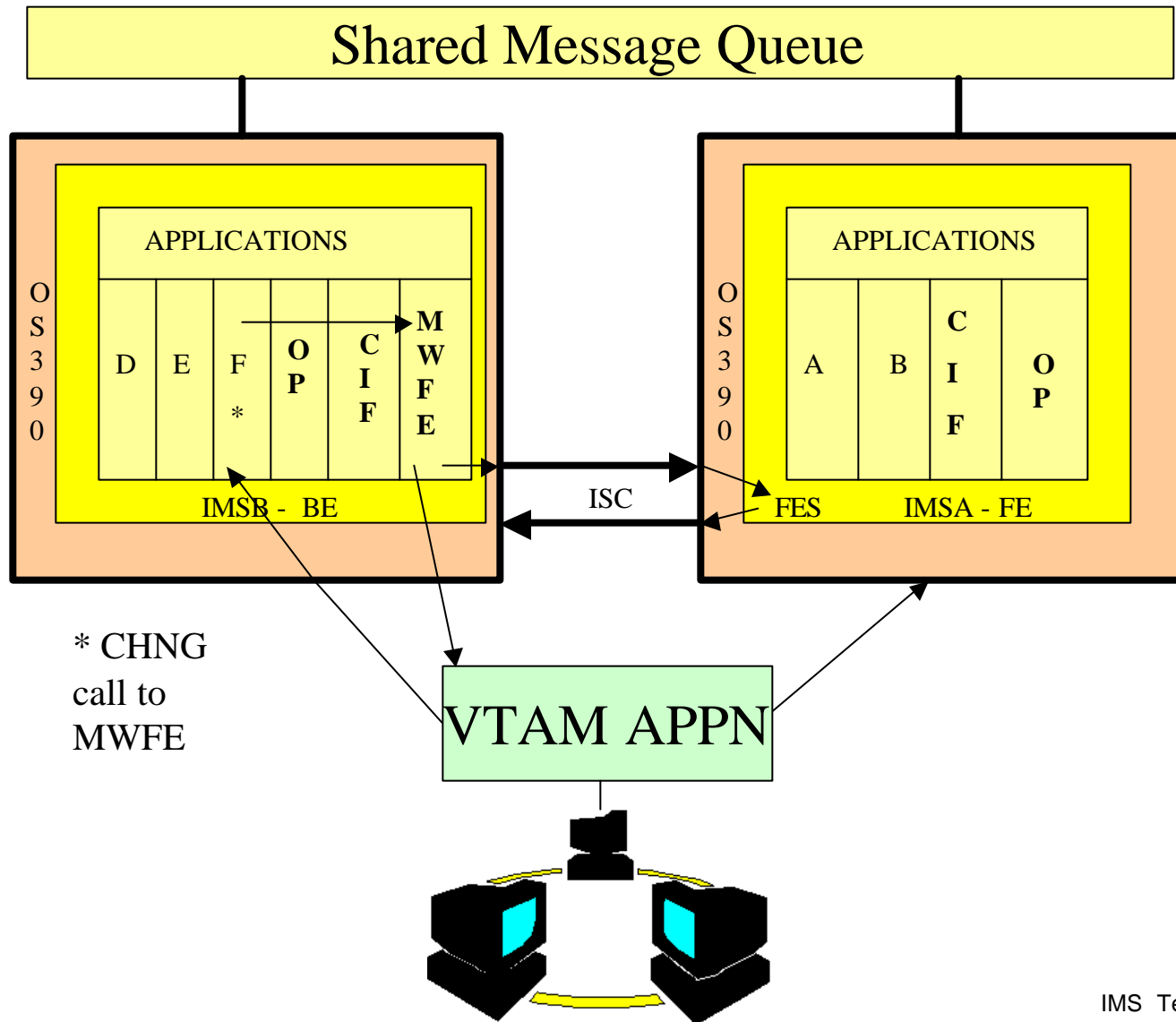


Frontend Switch Problem...

- When VGR is introduced, terminals on BE-IMS may enter transactions defined as remote on FE-IMS
 - Transactions defined as local
 - No Unique ID added
 - applications expect it
 - Applications respond to ISC link (MWFES)



Frontend Switch Solution



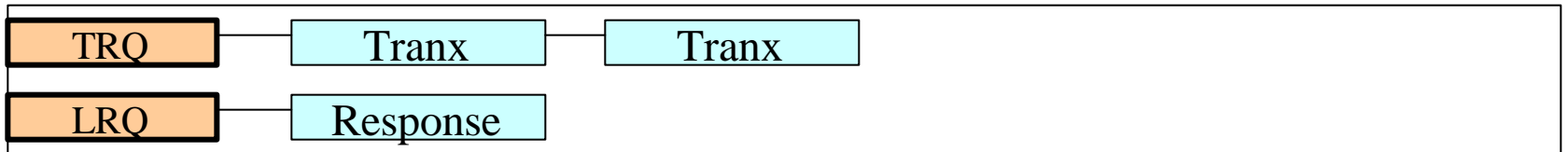
Frontend Switch Solution...

- Make BE-IMS transactions FESWOS
- Add new application MWFE
 - Examines Unique ID and responds to:
 - ISC LTERM if terminal on FE-IMS
 - Directly to terminal if its on the BE-IMS
- Still no solution if FES application is cloned

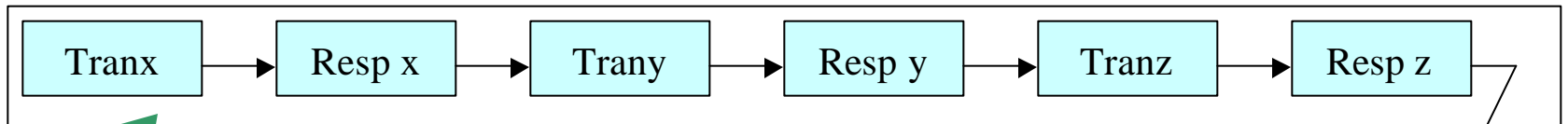


MVS Logger Performance Problem

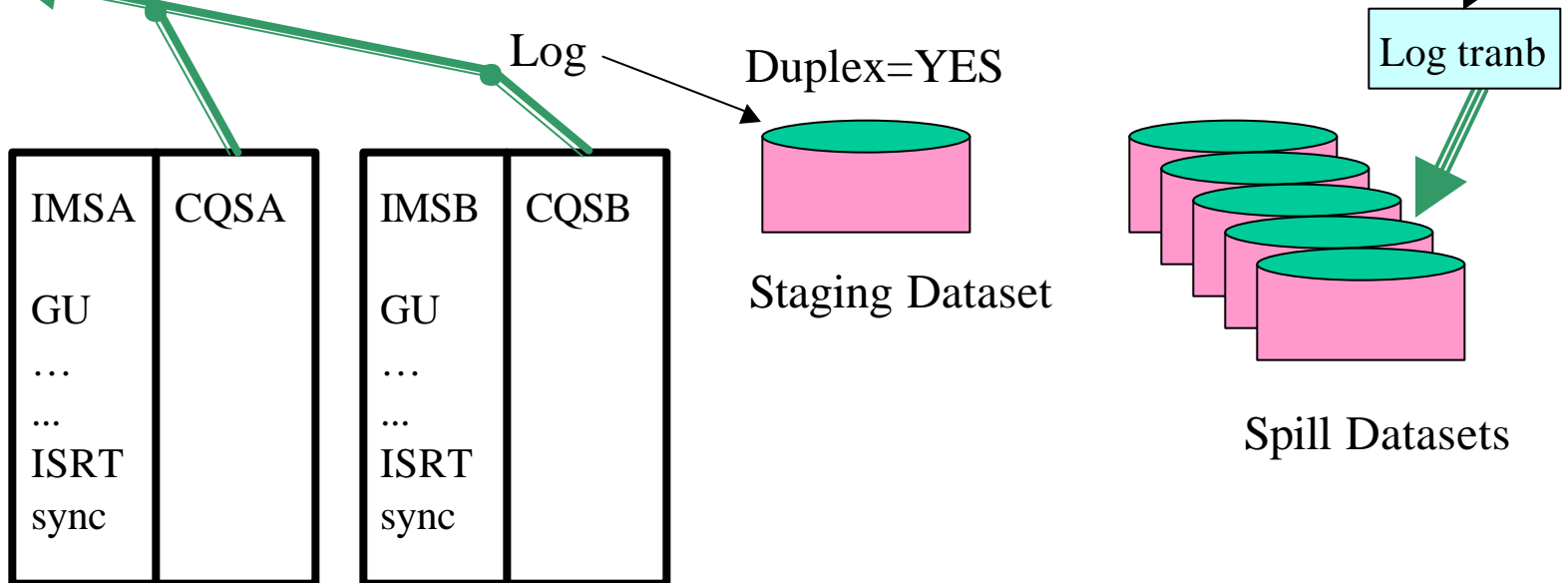
MSGQ/EMHQ Structures



MVS logger Structures *



*
1 for EMHQ
1 for MSGQ



MVS Logger Performance Problem...

- Before putting transaction/Response on MSGQ/EMHQ, CQS logs it
- Before MVS puts log data in log structure
If **DUPLEX=YES** then...
 - Hardened log data to staging dataset first
 - IMS Region Occupancy increases (30 msec)
- Use **DUPLEX=NO**
 - Region Occupancy acceptable (10 msec)
 - Put logger structure on different CEC



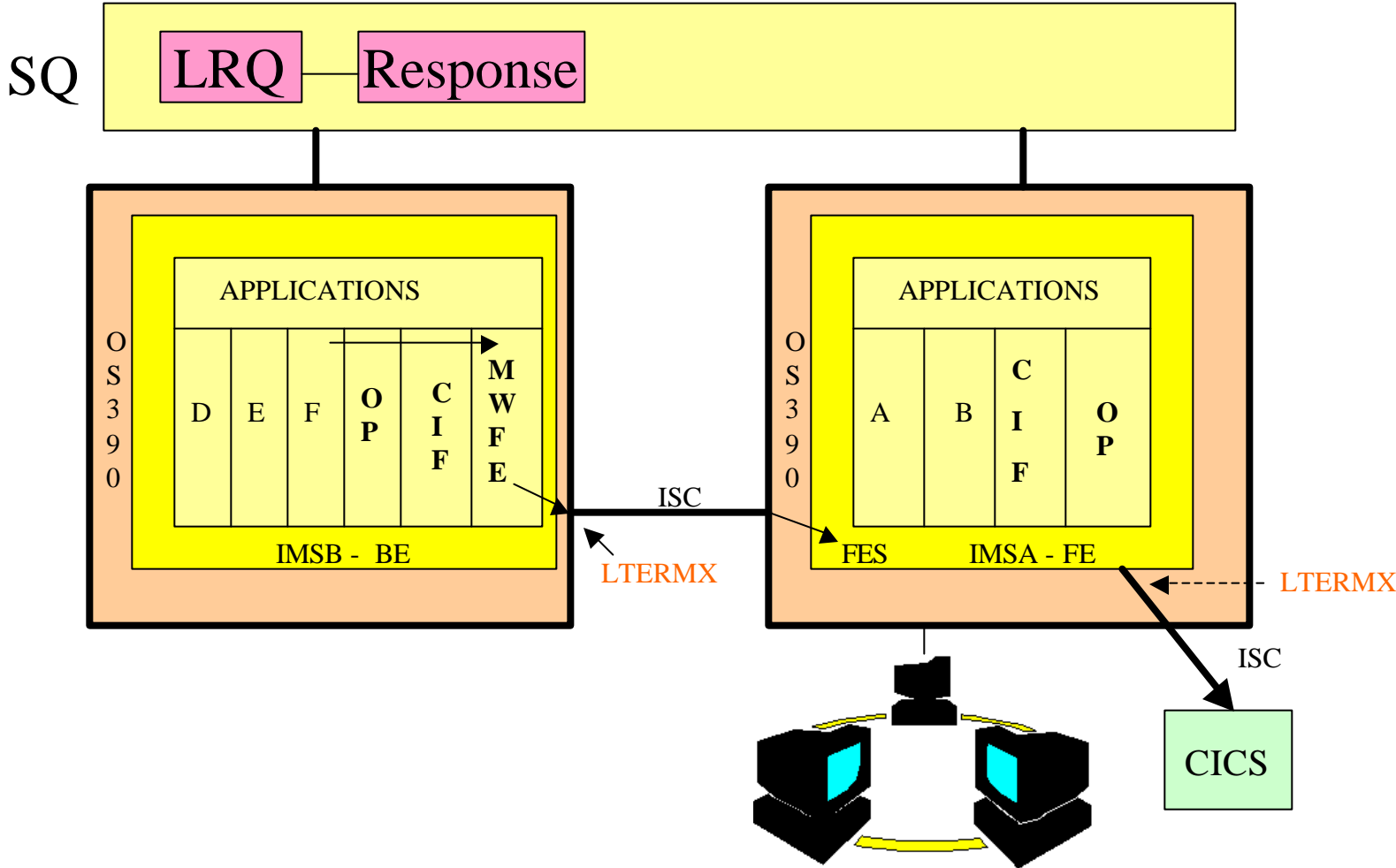
IMS Performance Analyzer

Comparison DUPLEX=YES and DUPLEX=NO

		Min ***** Average Transit Time (msec) *****								
Transact Code	PSB	Resp Count	Tran Time	Input Queue	Swit Queue	Pgm Exec	----- Queue	Output CQS	----- Local	Total
CUD0	CUD0	976	10	49	0	63	0	35	0	112
CUD0	CUD0	1,747	4	10	0	14	0	10	0	23



Duplicate LTERM



Duplicate LTERM Problem

- Transactions that use ISC still get put on SQ
 - Probably for recovery purposes
- All systems with same LTERM get notified
- In our case when IMSA got response first:
 - Sent it to CICS ISC that had same LTERM
 - IMSB lost response
 - ISC link hung, all ISC traffic stopped



The Last Y2K Bug?

- IMS Performance Analyzer - 0C7
- Caused by time field in X'35' ENQ Record
- DFSILTA0 still using 8 byte time field should be new 12 byte format.



Communications

- Very Large Project
- Involves many departments
 - IMS, Host, VTAM, Development, Operations...
- Must be informed
- Requires dedicated PM

Summary

- It wasn't easy
- Need User Commitment
- Keep everyone informed
- Good Luck

