IMS 07 IMS Shared Queues Considerations

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Agenda

Topics

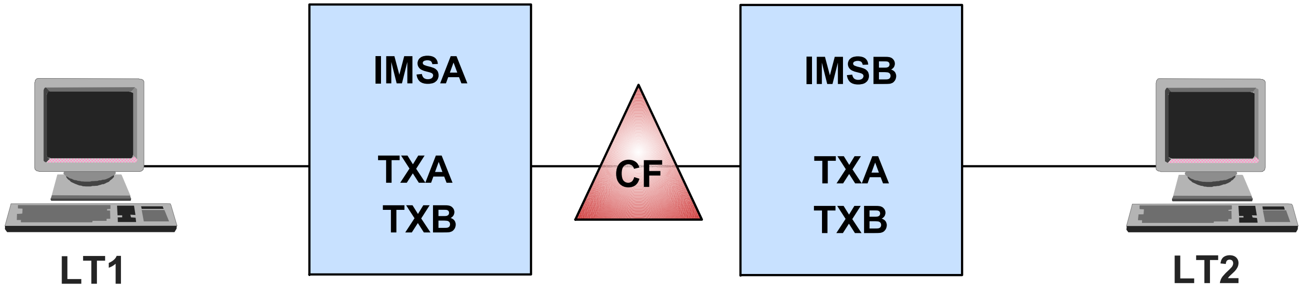
- Configurations
- Applications
- Conversational Transactions
- ETO Multiple Signon
- ETO Autologon and Shared Printers
- MSC Considerations
- ISC Considerations
- Serial Transactions
- Undefined Resources
- Security
- Log Records
- Miscellaneous
- Exits

Configurations

Cloned Systems

- Transactions will be processed localy if possible
- backup for failing system
- with VGRS only very short outage for sessions with failing system

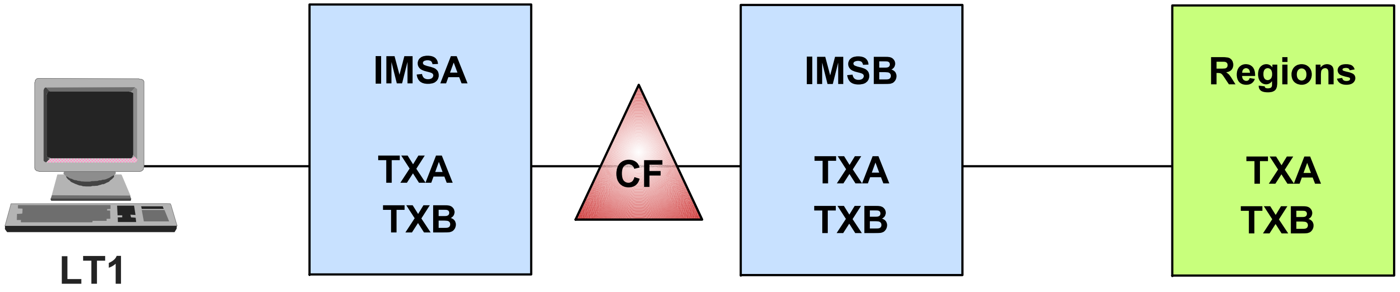
Recommended Solution



Configurations

Terminals / Regions

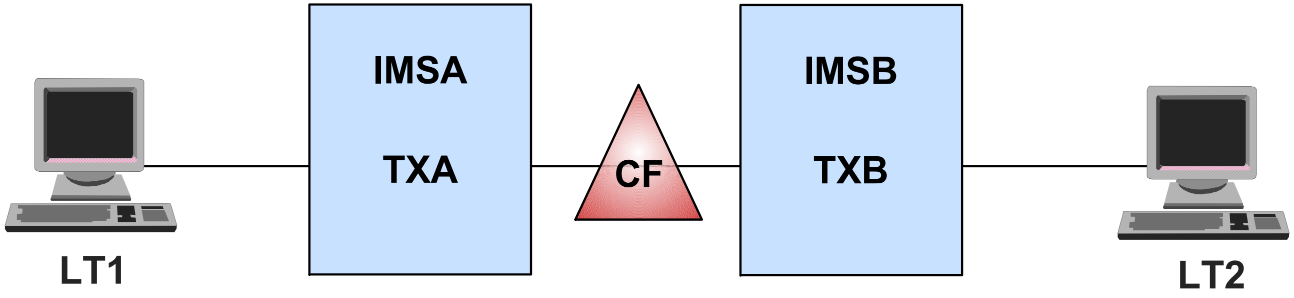
- Frontend IMS owns all Sessios, Transactions will be processed in backend IMS(s)
- Performance Impact as no Transactios will be processed in Frontend



Configurations

Separate by Applications

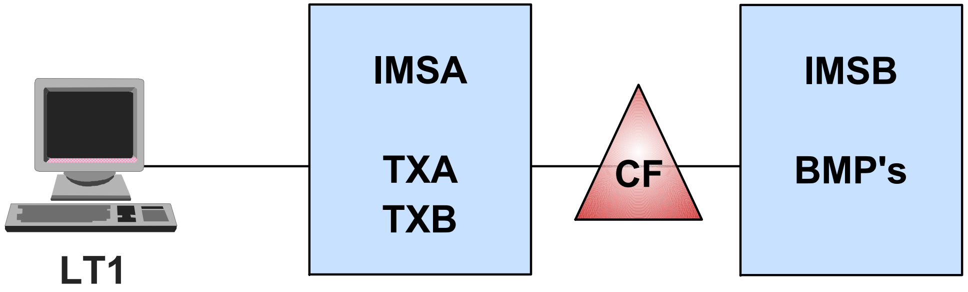
- Sepparate Sessions ?
- if sessions not separated, performance issue like frontend / backend configuration
- no backup **!**



Configurations

Transactions / BMP's and Batch

- performance and capacitiy issues might be met
- no backup !



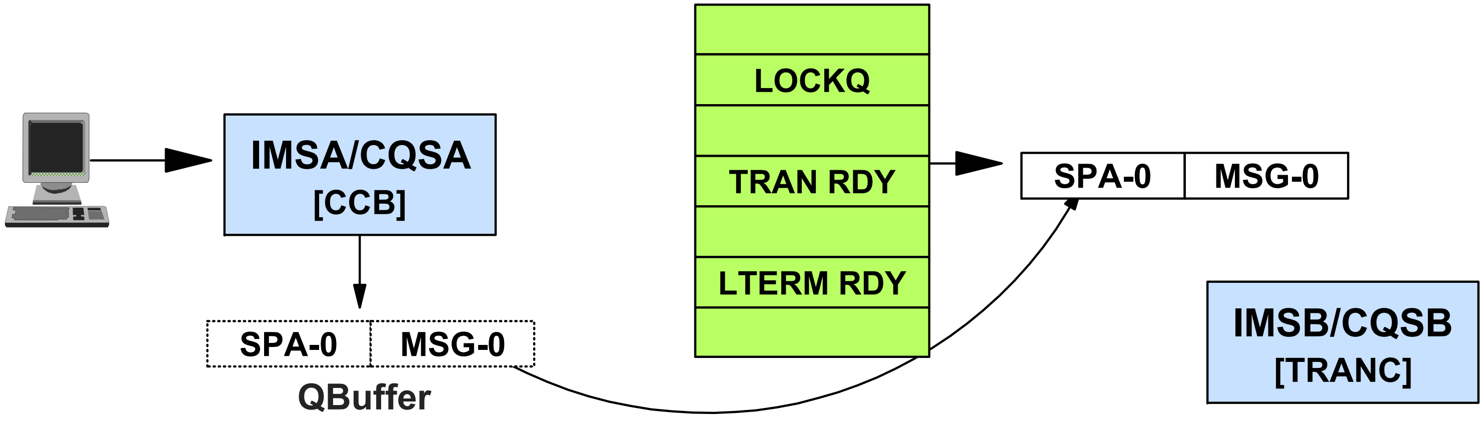
Applications

- **Not all Applications can run unchanged in an IMSPlex !**
  - Some application logic my be based on IMSID
  - MSDB's
  - Main Storage Data
    - Tables
    - Unique Sequence Number
  - SCHDTYPE=Serial
- **Don't start a Shared Queues project without your people responsible for the Applications !**

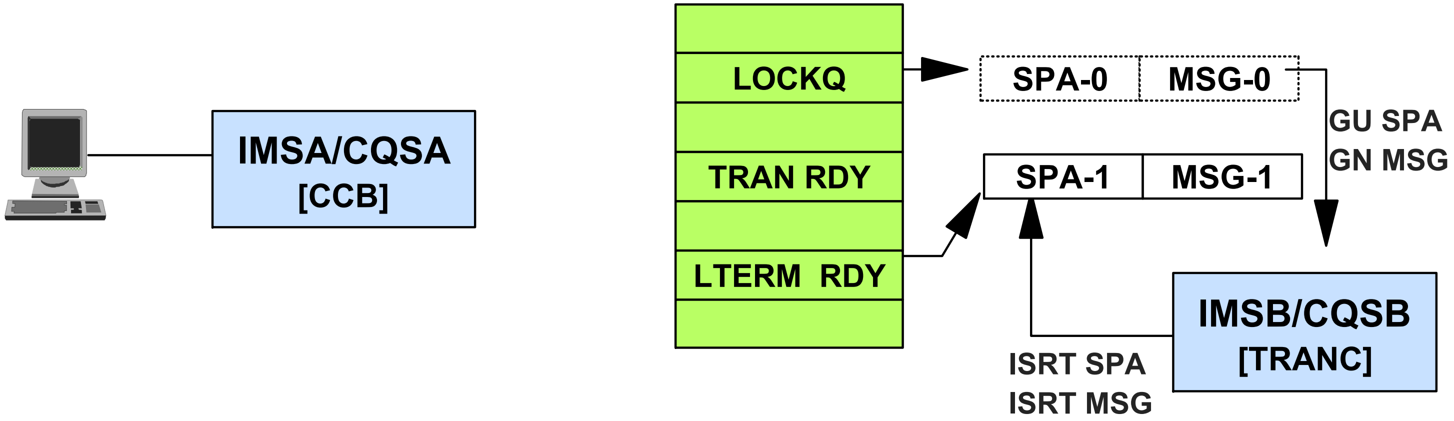
Conversational Transactions

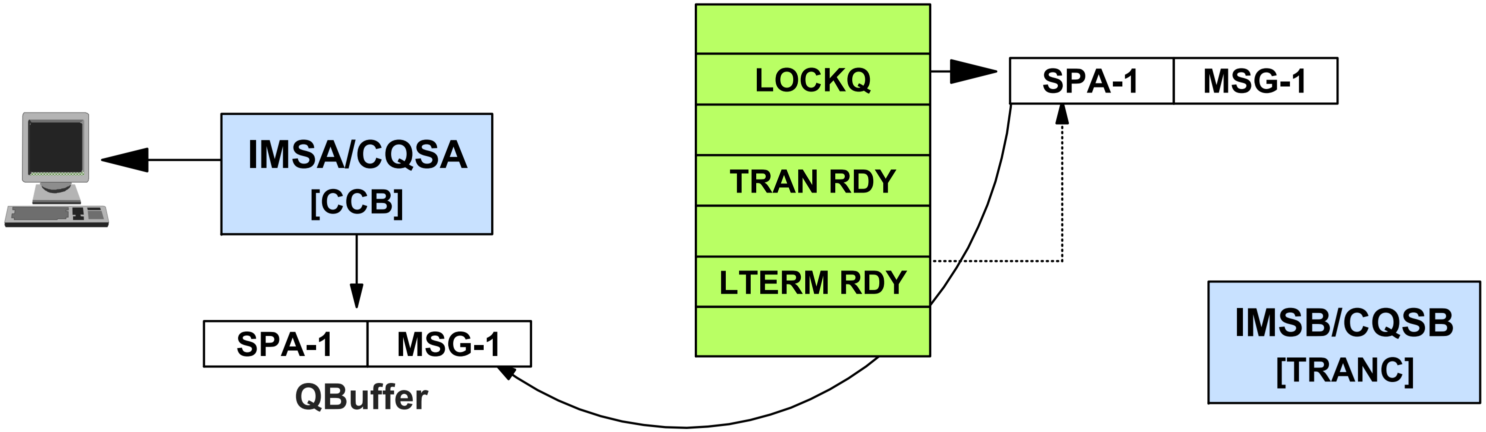
Conversational transactions are supported in Shared Queues

- Transaction entered on IMSA can be processed on any IMS in the SQ group
- Front-end IMS puts SPA and Message on the Transaction Ready Queue
  - All IMSs are informed
- Processing IMS puts SPA and response message on LTERM Ready Queue
  - Front-end IMS delivers message
- SPA and output message saved in structure on LOCKQ and in F-E IMS QPOOL and in MSGQ structure (LOCKQ)
  - Must be considered when sizing structure and local buffers (IMS V6)



Conversational Transactions ...

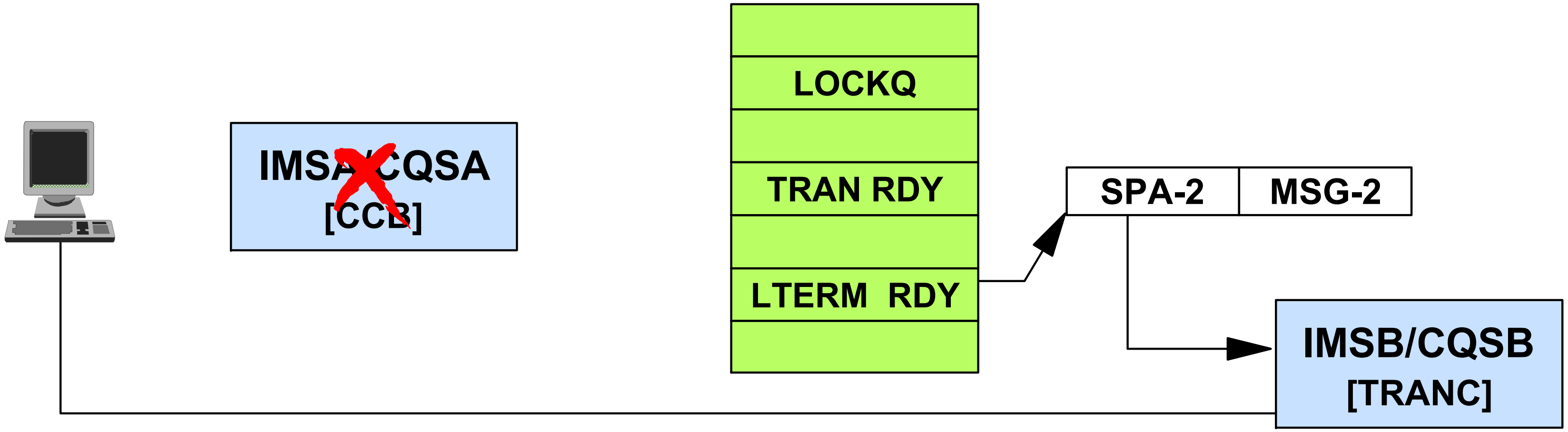




Conversational Transactions ...

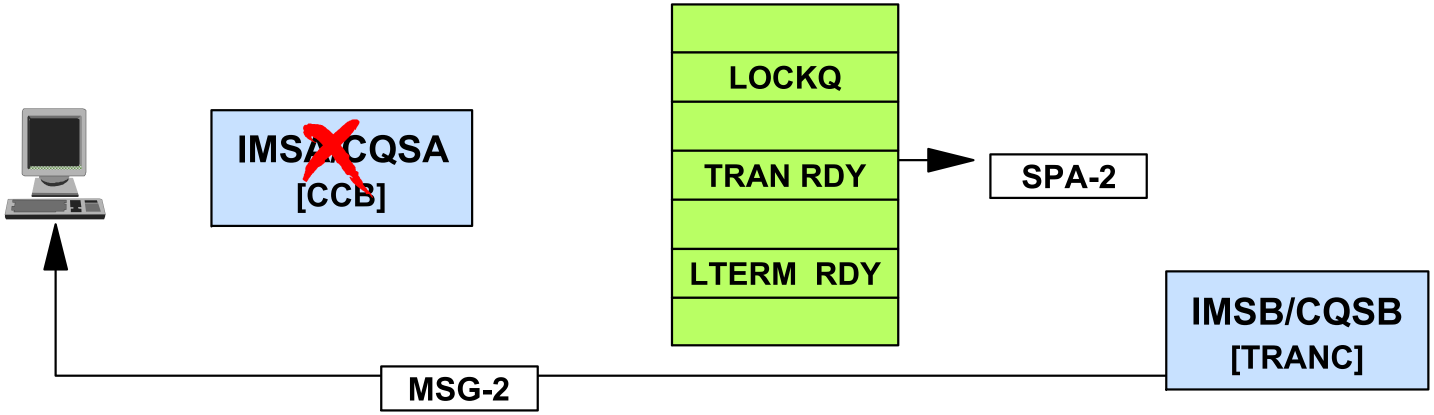
- **Conversational status is known only to Front-End IMS**

  (without Sysplex Terminal Management from IMS V8)
  - Status maintained in F-E control blocks (VTCB, CCB, SPQB)
- **If IMSA fails and user logs on to IMSB**
  - IMSB registers interest in LTERM
- **If there is a message on the queue when IMSB registers interest**
  - Conversational status is unknown to IMSB
  - IMSB will drive conversation abnormal termination exit (DFSCONE0)

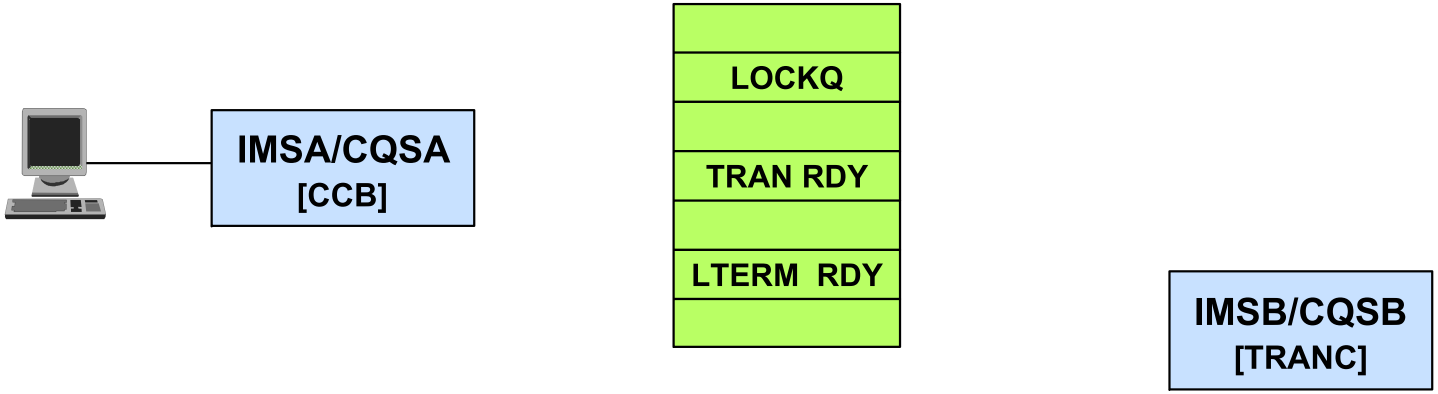


Conversational Transactions ...

- **Exit can**
  - Deliver or delete message, requeue or delete SPA

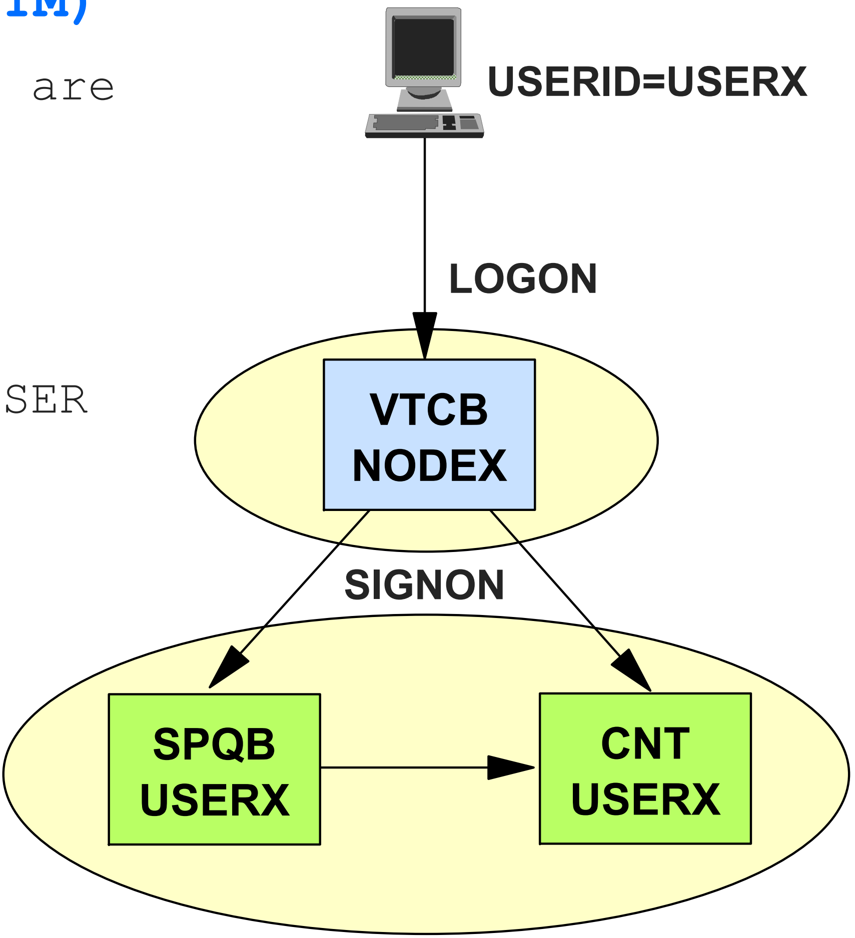


- **If user later logs back on to IMSA**
  - User is back in conversational mode, last response is gone, terminal hung



ETO Considerations (Dynamic LTERMs)

- **When user logs on (without STM)**
  - Terminal control blocks (VTCB) are built defining the terminal characteristics
- **When a user signs on**
  - User structure is built with USER (SPQB) and LTERM (CNT) control blocks
- **If there is no signon exit**
  - LTERM name is set to USERID
    - e.g. USERX
- **If there is a signon exit (DFSSGNX0)**
  - Exit can specify LTERM name
    - e.g. USERX or FRED



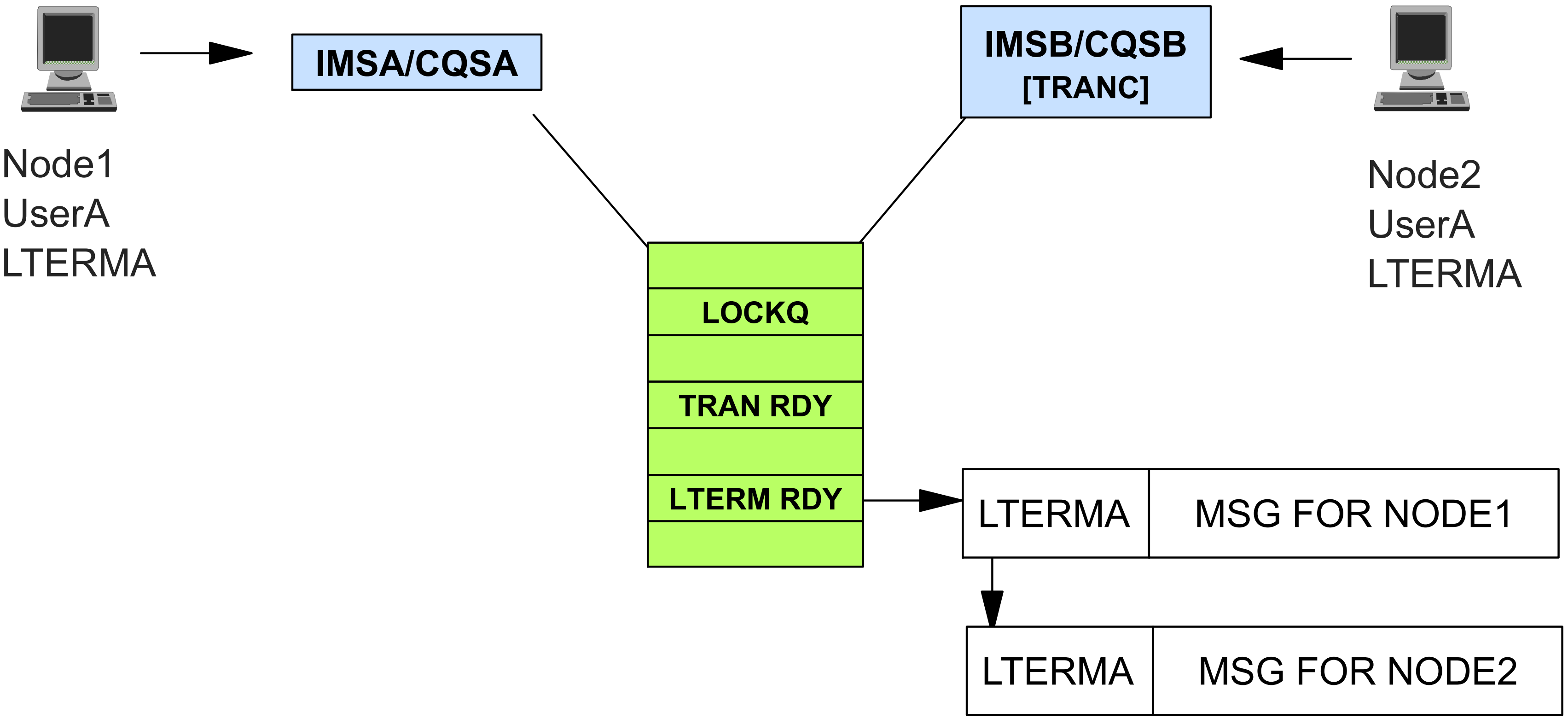
ETO Considerations ..

- **Potential problem exists if the same LTERM name is created in multiple IMSs**
  - Same user signs on to multiple IMSs without Signon Exit
  - Signon Exit generates the same LTERM name on multiple IMSs
- **When multiple signons are allowed in a single system**
  - Signon Exit creates unique LTERM names for each signon
    - e.g. USERX1, USERX2, USERX3
  - Signon Exit can determine whether an LTERM name is already assigned
- **When multiple signons occur in a Shared Queues Group**
  - Signon Exit does not know what LTERM names have been assigned in other IMSs in the group
  - May create duplicate LTERM names
    - IMSA: USERX1, USERX2
    - IMSB: USERX1, USERX2
  - Will cause problems when messages are queued by LTERM name

ETO Considerations ...

- **Possible solution 1**
  - Use LTERM-name assignment algorithm that guarantees uniqueness
    - e.g. USERX1A, USERX1B
  - Use a table of valid LTERM names
    - Table is different for each IMS
- **This raises another problem**
  - If applications are sensitive to LTERM name
    - e.g. Printer for USERX1 is USERX1P
- **Potential solution 2**
  - Require user to always sign on to just one IMS
    - LTERM names for multiple signons can be unique
- **But . . .**
  - Can't prevent user from signing on to multiple IMSs
  - Mitigates some availability benefits
- **Best.........use IMS V8 Sysplex Terminal Management**

ETO Considerations ...



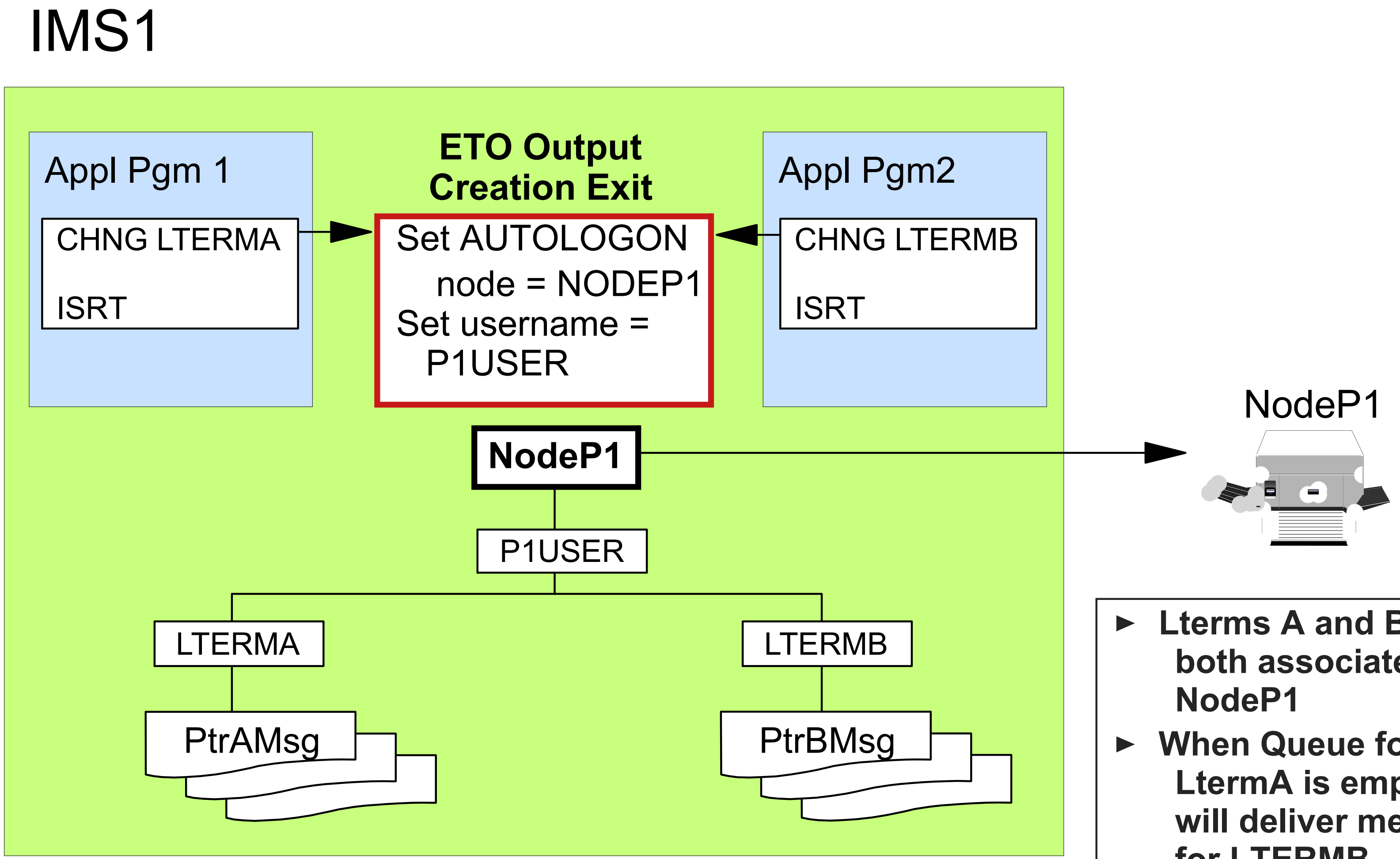
Since queuing is by LTERM only, either message could be delivered to either Node1 or Node2.

Shared Printers and ETO Autologon

- **Shared printers and ETO Autologon support**
  - Session automatically initiated on system originating output
- **Multiple systems may compete to deliver output from a specific queue (LTERM) name**
  - Destination is a **Shared Printer** defined in two or more systems
  - Destination is subject to **Autologon** from two or more systems
  - Destination **LTERM is active in two or more systems**

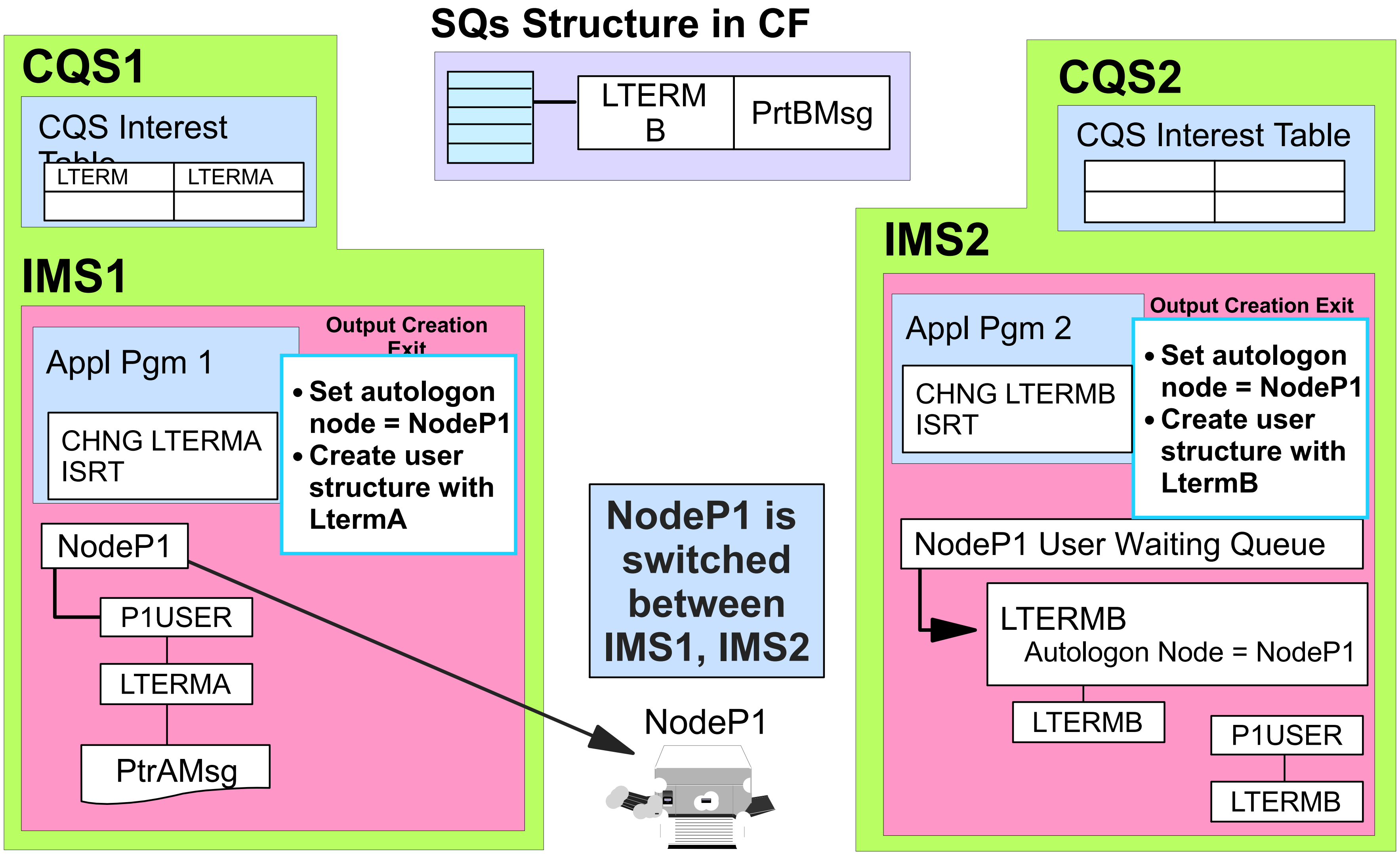
Autologon with a Single IMS (Reminder)

One Possible Implementation



- **Lterms A and B are both associated with NodeP1**
- **When Queue for LtermA is empty, IMS will deliver messages for LTERMB.**

Autologon With SQs and Multiple IMSs



SQs Structure in CF

LTERM B | PrtBMsg

CQS1

CQS Interest Table

LTERM | LTERMA

IMS1

Appl Pgm 1

CHNG LTERMA
ISRT

Output Creation Exit

- Set autologon node = NodeP1
- Create user structure with LtermA

NodeP1

P1USER

LTERMA

PtrAMsg

NodeP1 is switched between IMS1, IMS2

NodeP1

CQS2

CQS Interest Table

IMS2

Appl Pgm 2

CHNG LTERMB
ISRT

Output Creation Exit

- Set autologon node = NodeP1
- Create user structure with LtermB

NodeP1 User Waiting Queue

LTERMB
Autologon Node = NodeP1

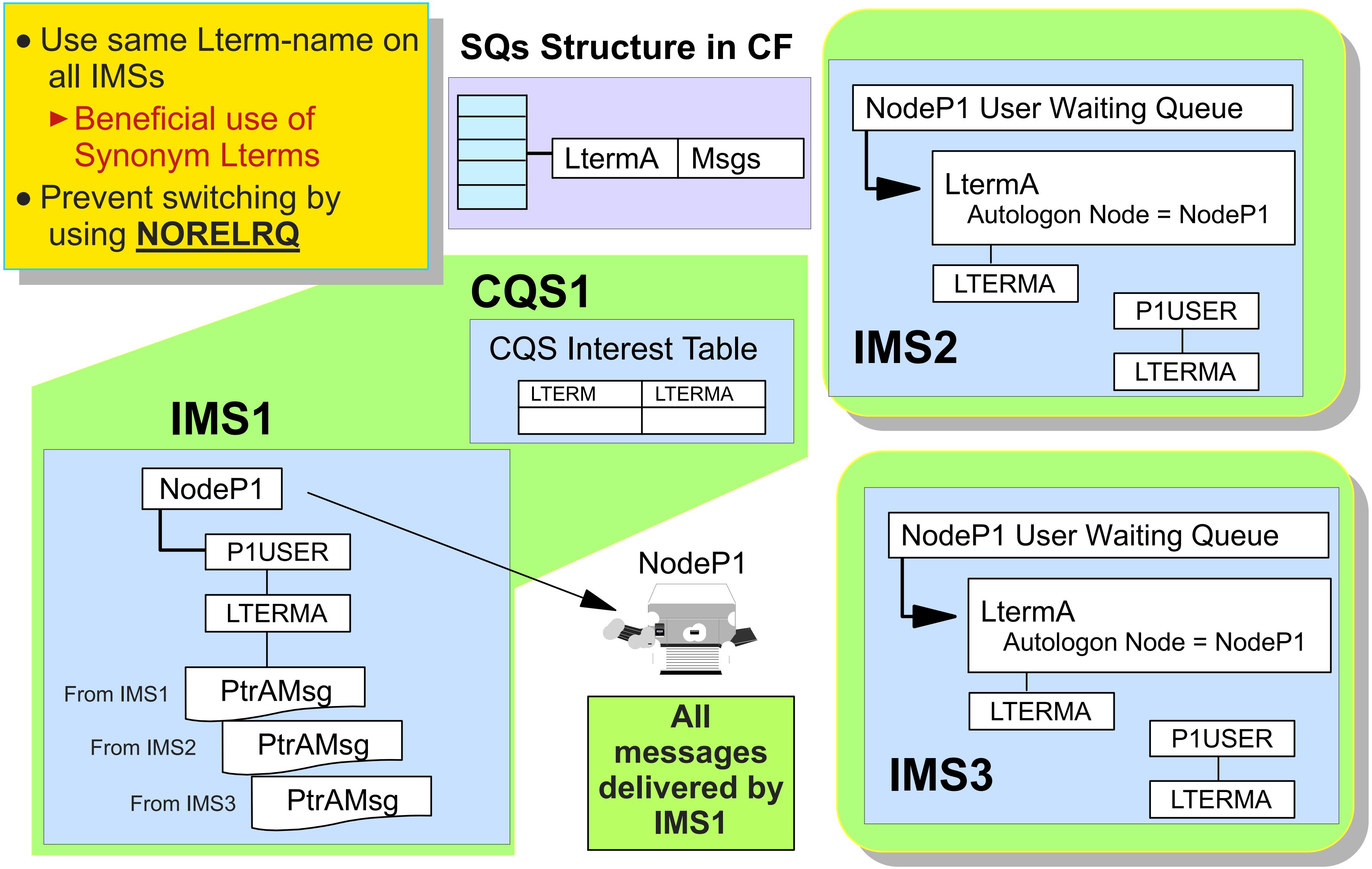
LTERMB

P1USER

LTERMB

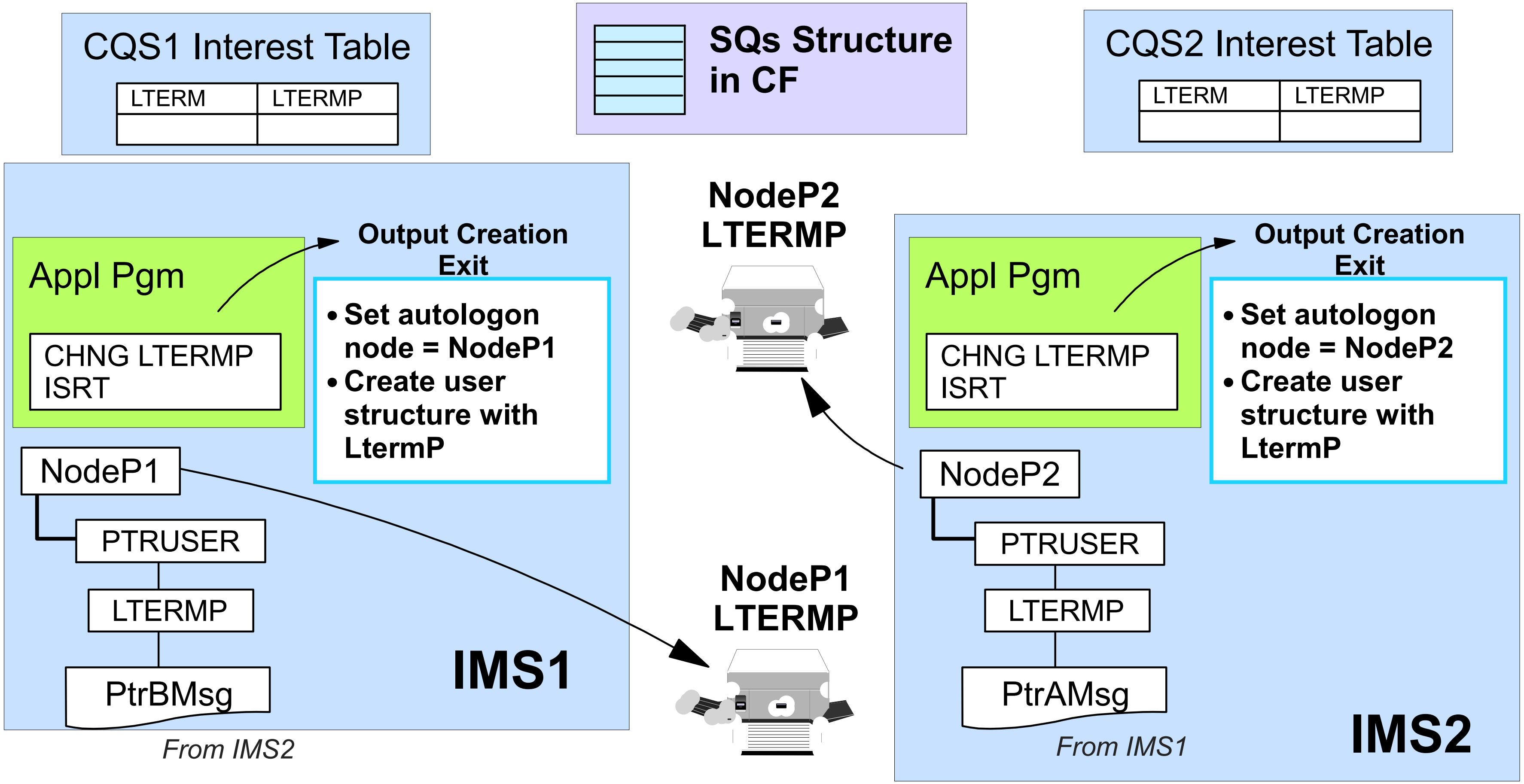
Shared Printers - Potential Solution

- Use same Lterm-name on all IMSs
  - ► Beneficial use of Synonym Lterms
- Prevent switching by using **NORELRQ**



Another Possible Approach

This allows two printers to be used as a single resource. Messages from both IMSs will be intermixed on both printers. It requires a Smart Output Creation exit.



CQS1 Interest Table

LTERM	LTERMP

SQs Structure in CF

CQS2 Interest Table

LTERM	LTERMP

Appl Pgm

CHNG LTERMP
ISRT

Output Creation Exit

- **Set autologon node = NodeP1**
- **Create user structure with LtermP**

NodeP1

PTRUSER

LTERMP

PtrBMsg

IMS1

From IMS2

NodeP2 LTERMP

NodeP1 LTERMP

Appl Pgm

CHNG LTERMP
ISRT

Output Creation Exit

- **Set autologon node = NodeP2**
- **Create user structure with LtermP**

NodeP2

PTRUSER

LTERMP

PtrAMsg

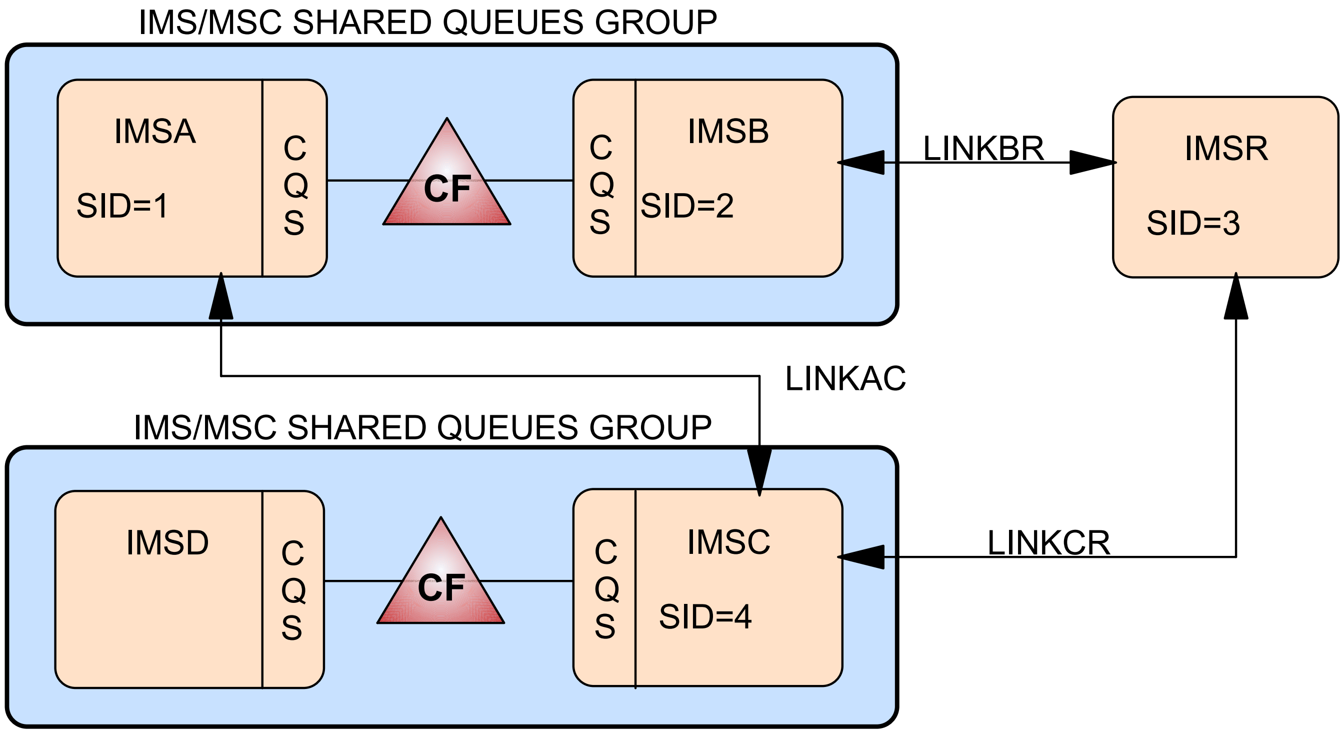
From IMS1

IMS2

MSC and Shared Queues

MSC systems can exist in the Shared Queues environment

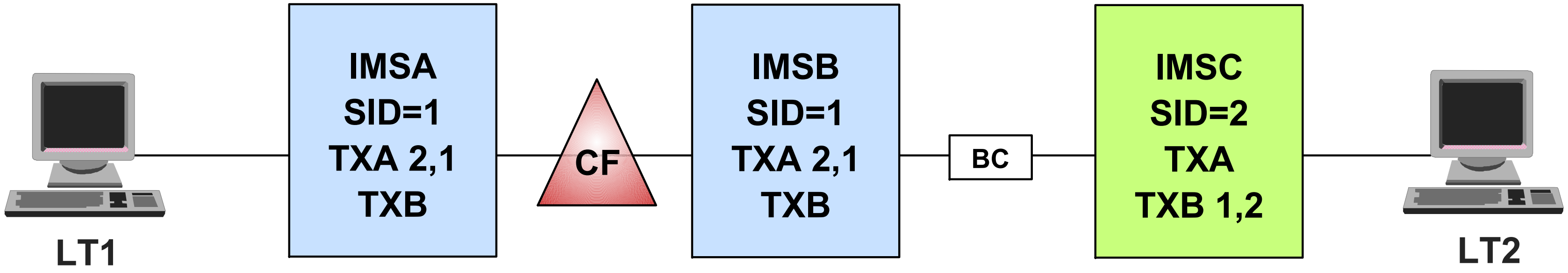
- Messages may be entered to any IMS is a shared queues group and be sent by another IMS in the shared queues group to a remote IMS
- Messages arriving from a remote IMS may be placed on the shared queue and processed by any IMS with registered interest



SYSIDs

With MSC in a Shared Queues environment

- Local SYSIDs are considered to be **local to all IMSs in the Shared Queues Group**
- Any message destined for any SYSID local to the Shared Queues Group
  - Is placed on the Shared Queues
  - May be retrieved by any IMS in the group with interest in the destination name
- Enables every IMS in the shared queues group to
  - Process MSC input from any remote IMS (e.g.TXB from LT2 on IMSC)
  - Send MSC output to any remote IMS (e.g. TXA from LT1 to IMSC)



Cloning MSC System Definitions

- **MSC definitions may be cloned throughout all IMS systems within a shared queues group**

  - Only one member of the shared queues group may have a cloned link active with an IMS remote to the shared queues group

  - Active links between IMSs within the shared queues group are not allowed (may not be started)

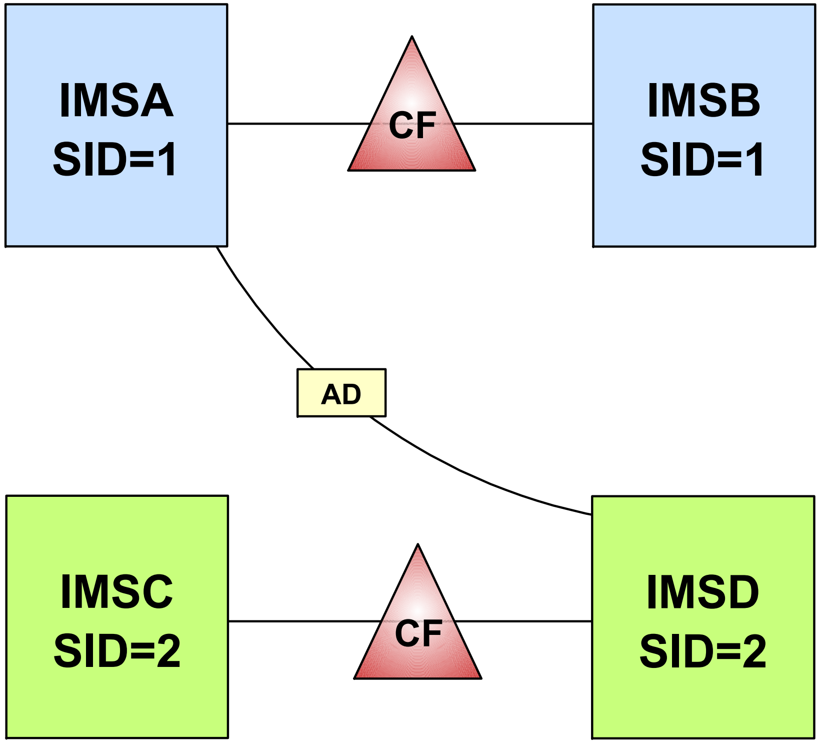
    - DFS2149 PARTNER IMS IN SAME SHARED QUEUES GROUP
      - RESTART ABORTED LINK xxx

  - One or more members of the shared queues group can be used to establish back-up connections in the event of link failure

Cloning MSC Definitions ...

Example: Shared Queues Group to Shared Queues Group

```
AD     MSPLINK NAME=IMSD
       MSLINK PARTNER=XX
       MSNAME SYSID=(2,1)
```



```
AD     MSPLINK NAME=IMSD
       MSLINK PARTNER=XX
       MSNAME SYSID=(2,1)
```

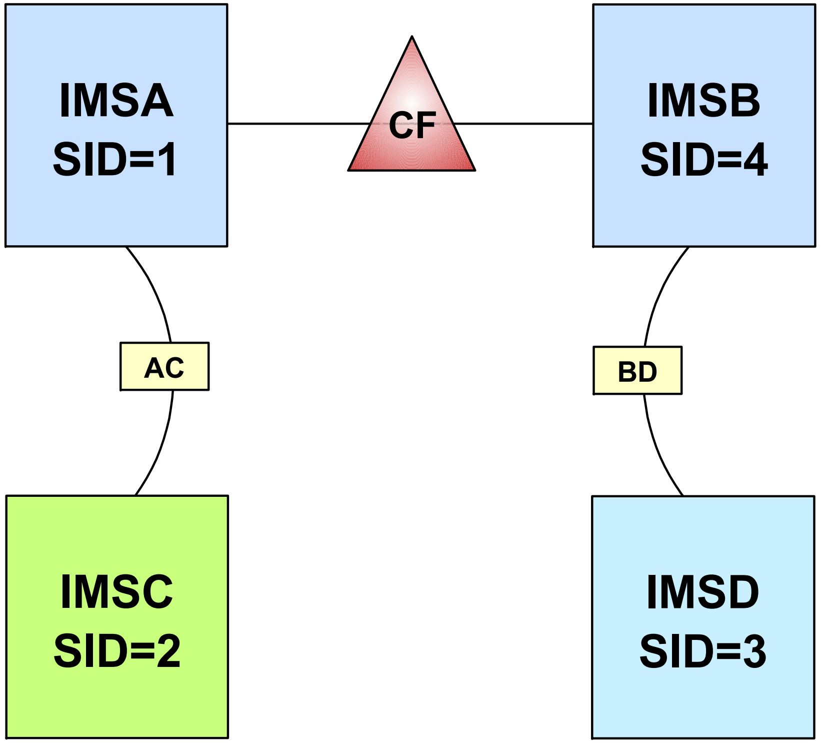
```
AD     MSPLINK NAME=IMSA
       MSLINK PARTNER=XX
       MSNAME SYSID=(1,2)
```

```
AD     MSPLINK NAME=IMSA
       MSLINK PARTNER=XX
       MSNAME SYSID=(1,2)
```

Cloning MSC Definitions ...

- **Example: Shared Queues Group to multiple remote IMS systems**

```
AC      MSPLINK NAME=IMSC
        MSLINK PARTNER=XX
        MSNAME SYSID=(2,1)

BD      MSPLINK NAME=IMSD
        MSLINK PARTNER=YY
        MSNAME SYSID=(3,4)
```



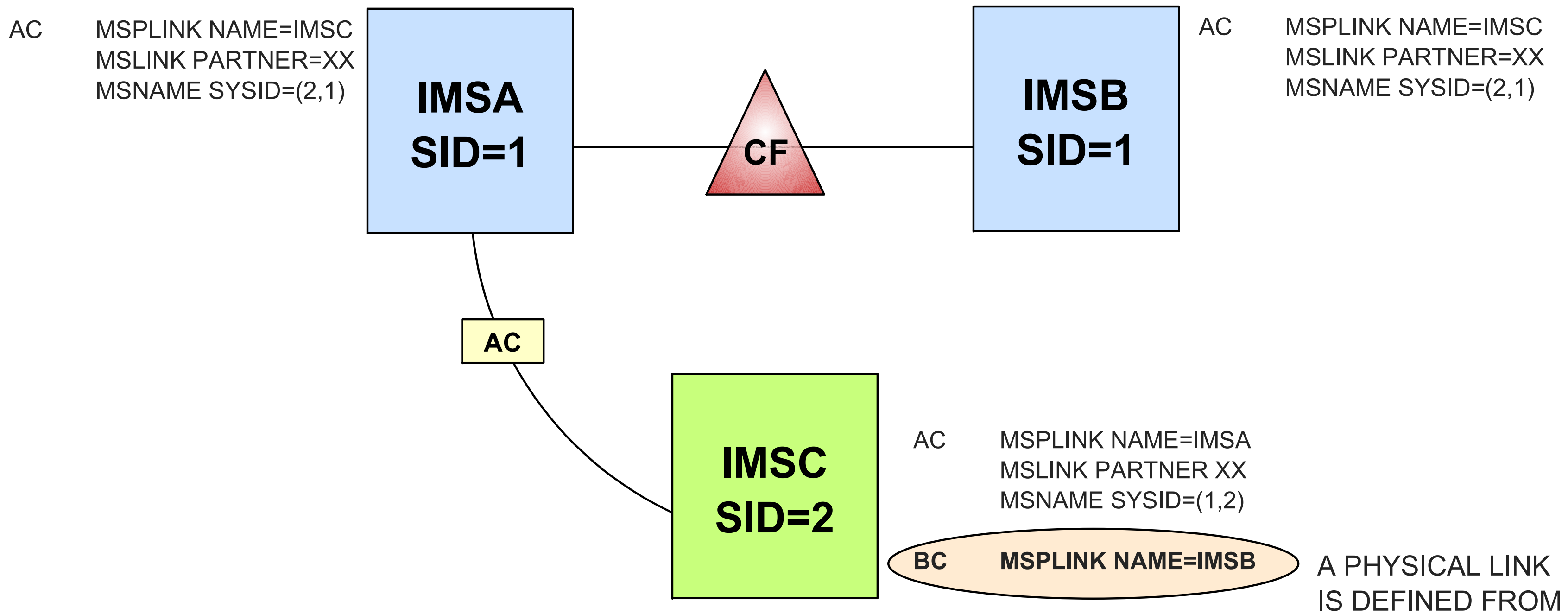
```
AC      MSPLINK NAME=IMSC
        MSLINK PARTNER=XX
        MSNAME SYSID=(2,1)

BD      MSPLINK NAME=IMSD
        MSLINK PARTNER=YY
        MSNAME SYSID=(3,4)
```

```
AC      MSPLINK NAME=IMSA
        MSLINK PARTNER=XX
        MSNAME SYSID=(1,2)
```

```
BD      MSPLINK NAME=IMSB
        MSLINK PARTNER=YY
        MSNAME SYSID=(4,3)
```

Cloning MSC Definitions ...

- **Backing up logical links from a shared queues group to a remote IMS**



AC MSPLINK NAME=IMSC
MSLINK PARTNER=XX
MSNAME SYSID=(2,1)

AC MSPLINK NAME=IMSC
MSLINK PARTNER=XX
MSNAME SYSID=(2,1)

AC MSPLINK NAME=IMSA
MSLINK PARTNER XX
MSNAME SYSID=(1,2)

BC MSPLINK NAME=IMSB

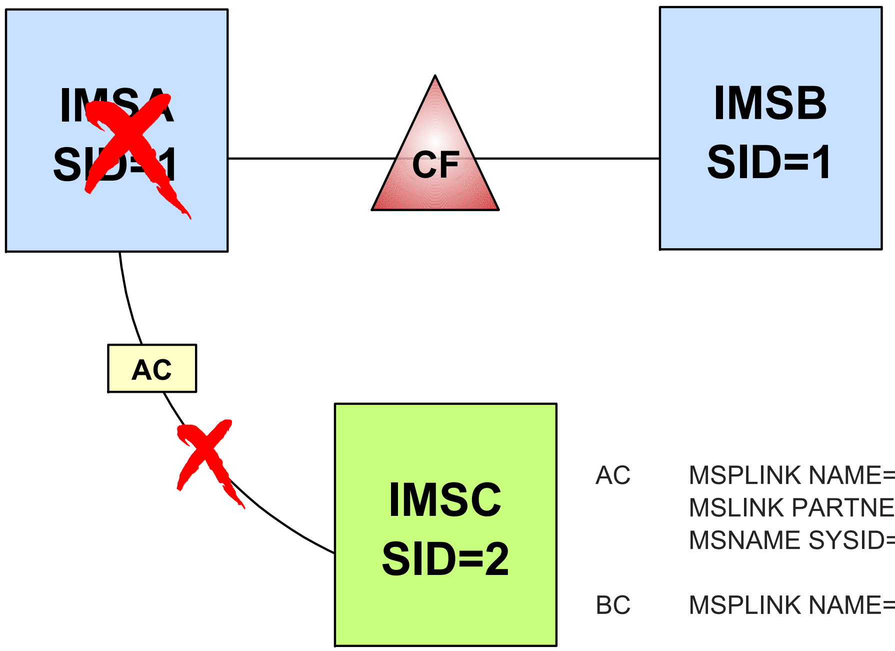
A PHYSICAL LINK IS DEFINED FROM IMSC TO IMSB, BUT NO LOGICAL LINKS

NOTE: THE CONFIGURATION AS SHOWN DOES NOT ALLOW CONCURRENT SESSIONS FROM IMSA AND IMSB TO IMSC.

Cloning MSC Definitions ...

Backing up logical links from a shared queues group to a remote IMS ...

AC MSPLINK NAME=IMSC
MSLINK PARTNER=XX
MSNAME SYSID=(2,1)



IMSA
SID=1

CF

IMSB
SID=1

AC

IMSC
SID=2

AC MSPLINK NAME=IMSC
MSLINK PARTNER=XX
MSNAME SYSID=(2,1)

AC MSPLINK NAME=IMSA
MSLINK PARTNER=XX
MSNAME SYSID=(1,2)

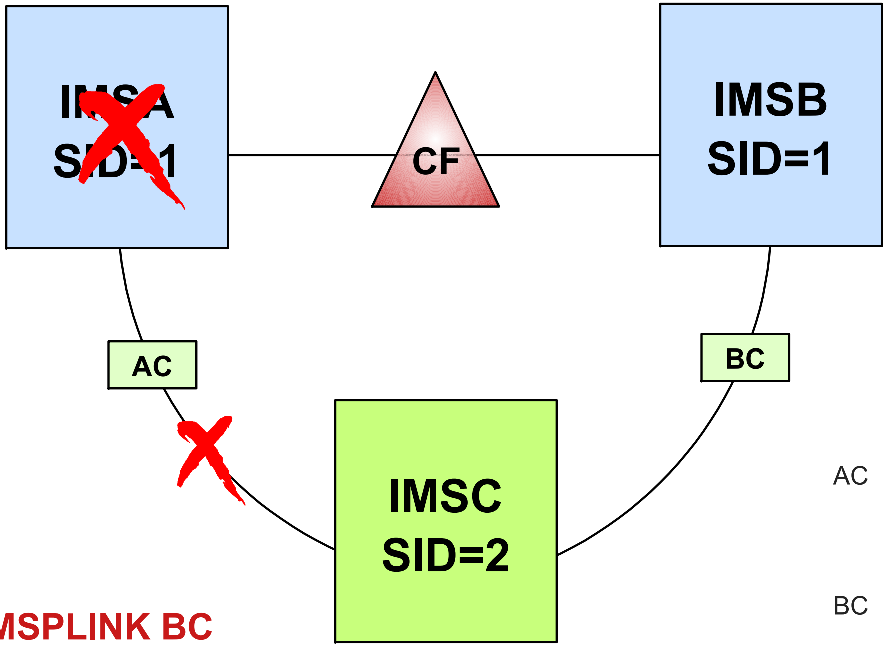
BC MSPLINK NAME=IMSB

1. **IMSA FAILS**

Cloning MSC Definitions ...

Backing up logical links from a shared queues group to a remote IMS ...

```
AC      MSPLINK NAME=IMSC
        MSLINK PARTNER=XX
        MSNAME SYSID=(2,1)
```



```
AC      MSPLINK NAME=IMSC
        MSLINK PARTNER=XX
        MSNAME SYSID=(2,1)
```

```
AC      MSPLINK NAME=IMSA
        MSLINK PARTNER=XX
        MSNAME SYSID=(1,2)

BC      MSPLINK NAME=IMSB
```

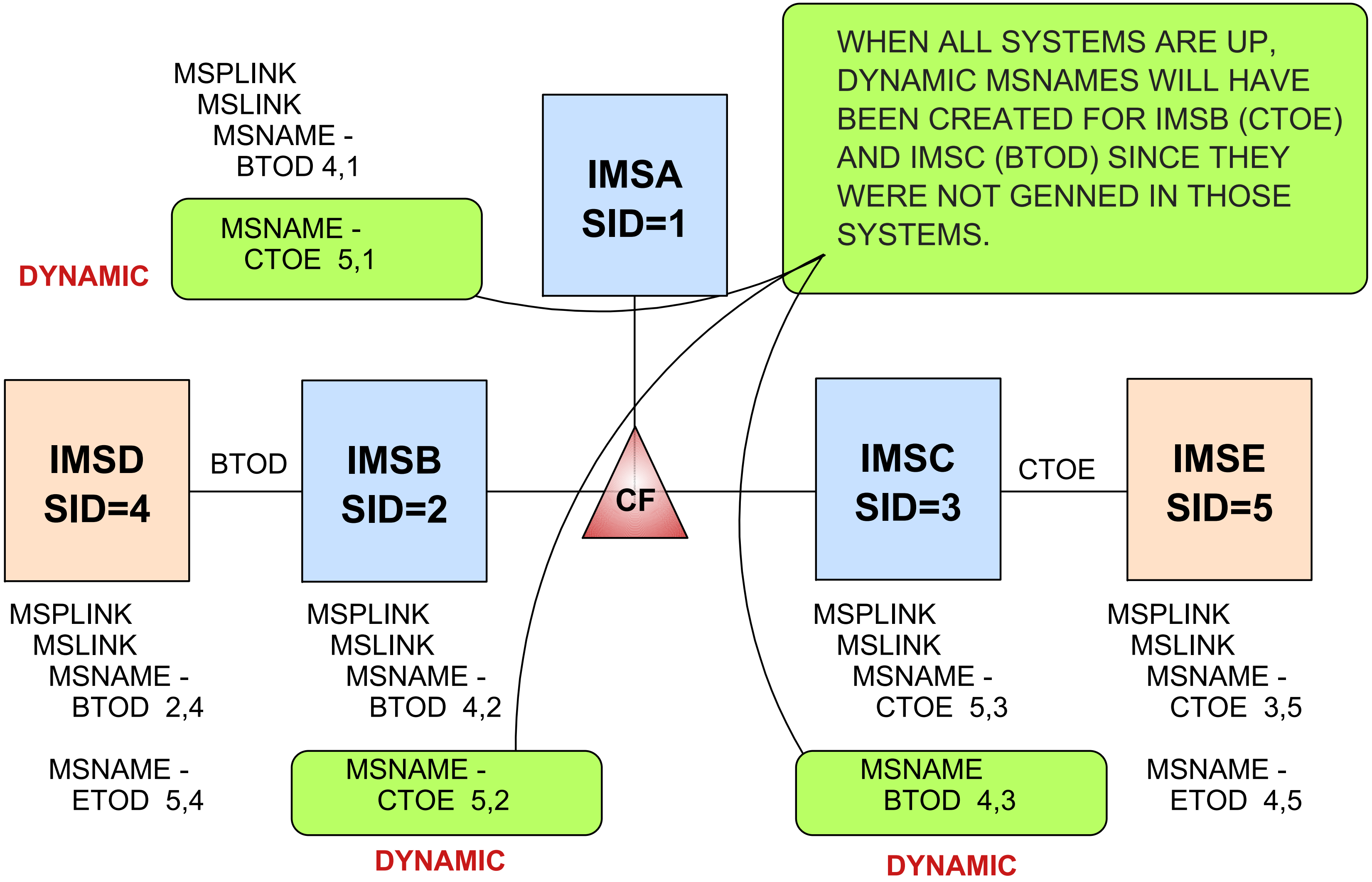
1. IMSA FAILS
2. **ON IMSC**
   - ✓ **/MSA LINK 1 MSPLINK BC**
3. **ON IMSB OR IMSC**
   - ✓ **/RSTART LINK 1**

Dynamic MSNAMEs & SYSIDS ...

For remote SYSIDs and their associated MSNAMES each IMS in the Shared Queues Group

- May SYSGEN the remote MSNAMEs of **all IMSs in the group**
  - Same MSNAME and remote SYSID
  - Unique local SYSID of this IMS or same local SYSID of other shared queues group member
  - **If not genned, IMS dynamically creates the remote MSNAMEs**
- These dynamic MSNAMES will never be started
  - Are used to route messages from any intermediate or back-end IMS in the group to the real MSNAME of the owning IMS in the group
  - These MSNAMEs are known as **dynamic MSNAMEs** and are needed to be able to queue messages to the Remote Ready Queue

Dynamic MSNAME Illustration

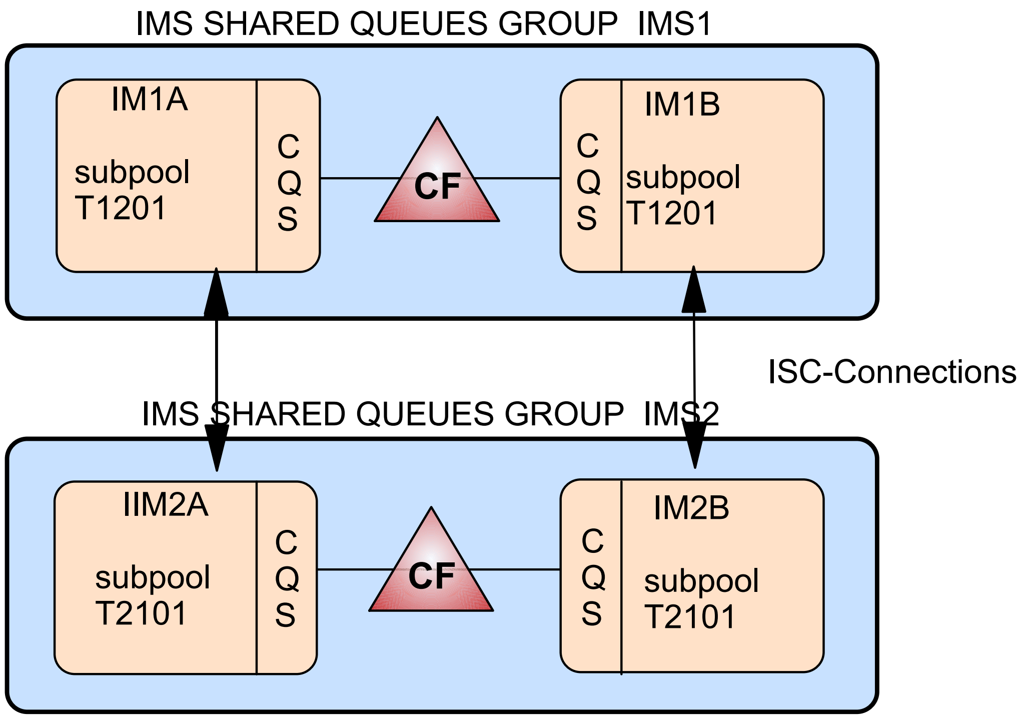


WHEN ALL SYSTEMS ARE UP, DYNAMIC MSNAMES WILL HAVE BEEN CREATED FOR IMSB (CTOE) AND IMSC (BTOD) SINCE THEY WERE NOT GENNED IN THOSE SYSTEMS.

ISC and Shared Queues

Cloned Systems and a pair of ISC-Connections

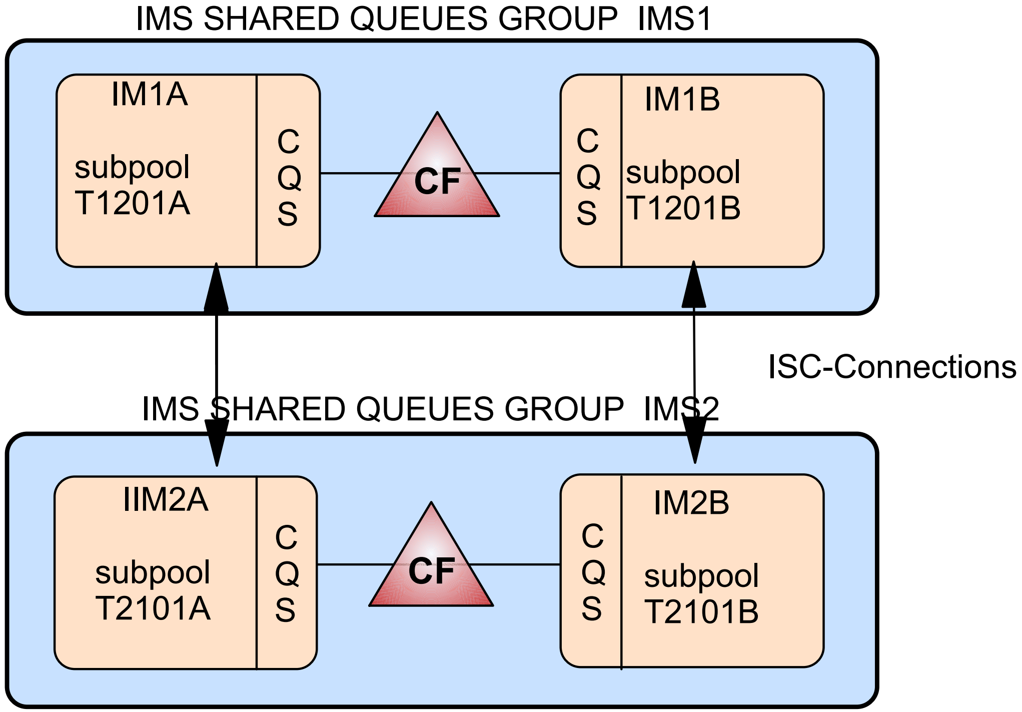
- Messages for a subpool will be put on the Terminal Ready Queue and can be sent to the partner system by any IMS in the group
- If one IMS or connection breaks, other IMS in the Group can backup



ISC and Shared Queues with STM (V8)

subpool names have to be unique througout an IMSPlex

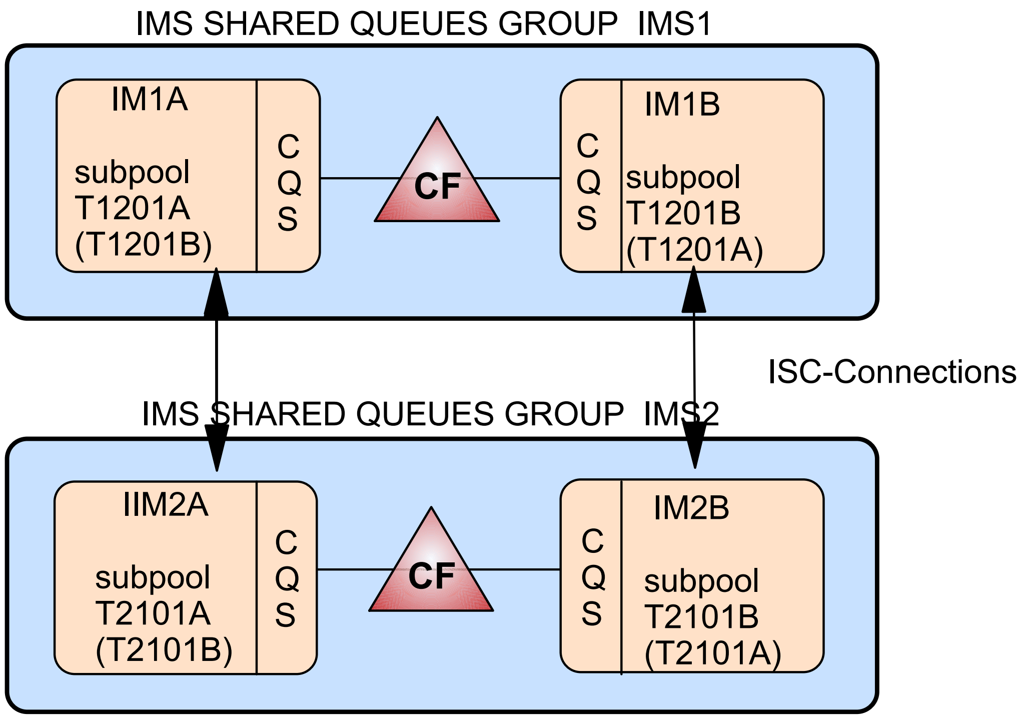
- messages can only be delivered by one system
- If one IMS or a connection breaks, other IMS in the group can not backup completely
- programs have to be modified to use different subpools depending on what system they are runing, or an exit has to be used



ISC and Shared Queues with STM (V8)

Suggestion

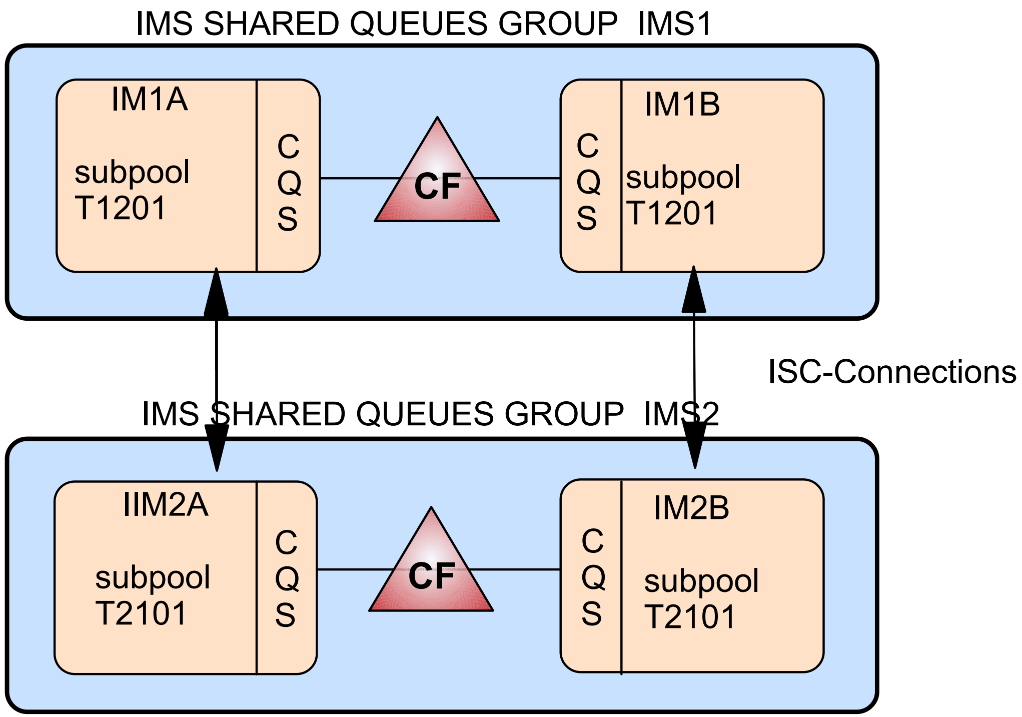
- define a double set of subpools in all members
- open part of the connections from each member
- in case of a failure, manual intervention is required to start the second set of subpools from the surviving system



ISC and Shared Queues

Better solution

- In IMS V9 subpool names need not be unique within the IMSPlex
- In IMS V8 this solution is available as usermod
- wait for V9 to implement STM or ask for usermod



Serial Transactions

Without shared queues

- Transactions defined as SERIAL=YES will be executed in the sequence they arrive
- If (for example) a serial transaction abends with a U3303, it will not be put on the suspend queue
  - It is requeued to the head of the regular queue
  - The transaction is USTOPPED
  - When transaction is started, original sequence is preserved

With shared queues

- Serialization of transaction scheduling is guaranteed only within the front-end IMS
- A serial transaction will always be scheduled only on the F-E IMS
  - Special QNAME includes IMSID
  - Guarantees serialization within that IMS
- The same transaction code, defined as SERIAL=YES in multiple IMSs, may not execute serially across the Parallel Sysplex

Note - SNA messages are preferentially selected for processing over OTMA/APPC

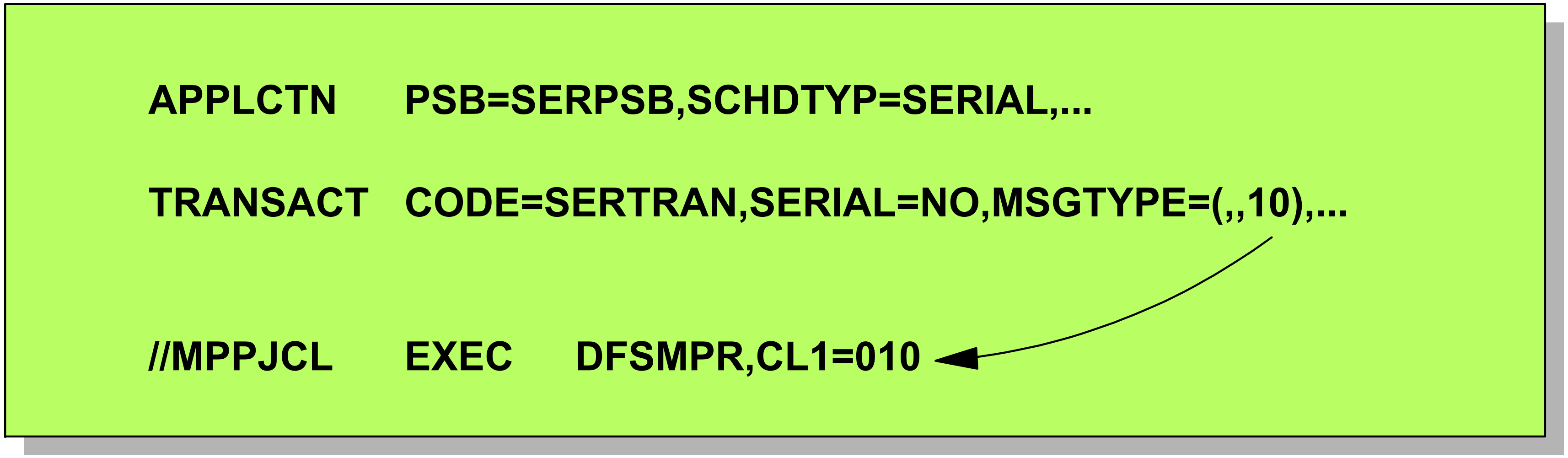
OTMA/APPC

V6 - were always processed in the front end system
V7 - Async can be processed in a back end system
V8 - Sync and Async can be in a back end system

Serial Transactions ...

If SERIAL processing is important

- Define the TRANSACT as non-serial and the APPLCTN as serial
- Assign transaction to a CLASS that will only execute on one IMS
- Start one MPP region on one IMS with the transaction class specified



```
APPLCTN     PSB=SERPSB,SCHDTYP=SERIAL,...

TRANSACT   CODE=SERTRAN,SERIAL=NO,MSGTYPE=(,,10),...


//MPPJCL      EXEC     DFSMPR,CL1=010
```

- Use the Non-discardable Message Exit (DFSNDMX0) to REQUEUE and USTOP any "pseudo-serial" transaction that abends with a U3303
  - R15 = 12 (requeue to original transaction and USTOP transaction)
- works only for pure SNA, pure OTMA or Pure APPC transactions

Schedtype=Serial ...

- **PSB can be scheduled only in one MPP or BMP**
  - honoured only in local IMS
  - SERIAL is default
  - start only one region per IMSPlex
  - no IMS inherent solution yet
  - Requirement 00075839 for an IMS solution

Undefined Resources

- **FINDDEST (Find Destination) routines are invoked to find the destination of a message before putting it on the shared queue**

  - Destination may be found
    - Transaction (local or remote)
    - Logical Terminal (local or remote)
    - MSNAME

  - Destination may be not-found
    - Undefined in local IMS

  - Undefined (not-found) destinations may still be valid
    - Must determine if destination is valid

  - Undefined destinations may be dynamically created
    - DFSINSX0 (Output Creation Exit)

Undefined Resources ...

If destination is undefined in local IMS

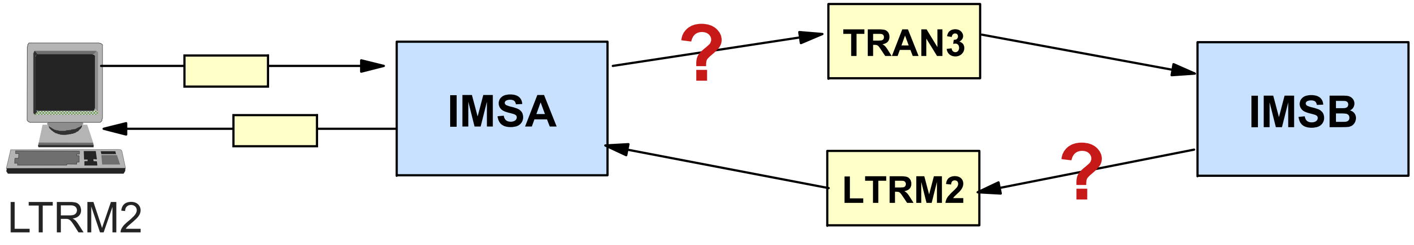
- May have been defined in other IMSs in the shared queues group
  - IMS does not know what resources are defined in other IMSs

IMSA

```
TRANSACT   TRAN1
TRANSACT   TRAN2

NAME       LTRM1
NAME       LTRM2
```

IMSB

```
TRANSACT   TRAN1
TRANSACT   TRAN3

NAME       LTRM1
NAME       LTRM3
```



Undefined Resources ...

- **IMSA must decide what to do with TRAN3**
  - Reject it
    - DFS064I Destination cannot be found or created
  - Put it on queue for IMSB
    - Must determine whether TRAN3 is valid for IMSB

- **IMSA can create dynamic transaction**
  - Output Creation Exit (DFSINSX0) can create transactions **for the purpose of putting them on the shared queue**
    - ETO not required for dynamic transactions
  - If DFSINSX0 defines input message as a Transaction
    - Input is queued to Transaction Ready Queue
    - IMSB will schedule transaction and ISRT response to IO-PCB
  - **Dynamic transactions cannot be executed locally (i.e. in IMSA)**

Undefined Resources ...

- **If IMSB tries to retrieve transaction from shared queue and input LTERM is not defined to IMSB ...**
  - If ETO is enabled
    - Dynamic terminal is created
  - If ETO is not enabled
    - Temporary control block is created for LTERM
    - Enables program to respond to input LTERM
- **If application issues call to ALT-PCB and destination not defined**
  - DFSINSX0 is invoked
    - May create dynamic transaction or dynamic LTERM (if ETO enabled)
  - If DFSINSX0 rejects destination, call fails
    - CHNG calls gets A1 status code
    - ISRT call gets QH status code

Security Considerations

Front-end security

- Nearly all security checking is performed on the front-end
  - Signon security
  - Command authorization
  - Transaction authorization

Back-end security

- Security environment (RACF ACEE) will be dynamically established in the back-end dependent region if needed for
  - CHNG, AUTH, and ICMD calls
  - Deferred conversational program switches
  - Environment deleted at sync point
- SMU security invoked for CMD calls issued from back-end IMS

Transaction must be statically defined in the environment in which security is being checked

- No security checking is performed for dynamic transactions
  - Undefined resource block created by DFSINSX0

Queue Buffer Usage

- **<u>Uncommitted</u> messages are kept in the msg Queue Buffers**
  - U758 is still received if running out of DRRN
  - Max available DRRN: same consideration for short and long message queue buffers:
    max DRRN=blkfct*9999 (9999 max Qbuf number in IMS V6)
    blkfct=qbufsz/shmsgsz (blocking factor for short msg)
    blkfct=qbufsz/lgmsgsz (blocking factor for longshort msg)
    max qbufsz=30632
- **Max Qbuf 9999 limit removed in IMS V7**
  - 20% of QBUF expanded when QMNGR runs out of Qbuffers
  - If needed will dynamic expand until QBUFMAX is reached
  - If QBUFMAX not specified can expand until storage (Private/Above) is exhausted
- **Review Short and Long Queue Buff LRECL for <u>uncommitted msg's</u> distribution in the Queue Buffer**
  - If msg<shmsgsz or shmsgsz<msg<lgmsgsz shrmsg Qbuf used
  - If msg>lgmsgsz lgmsg Qbuf and CF Staging Queue used (2nd and subsequent full Qbuf moved to the CF Staging Queue)

Queue Space Notification Exit (DFSQSPC0)

Traditional queuing

- Called when a QBuffer is allocated to a message queue data set (DRRN)
- Knows number of messages currently in use
  - Can reject insert

In shared queues environment

- Called when a QBuffer is allocated to a data object
- Exit cannot tell how full structures are
- Parameter list passed to exit includes two new bit settings
  - **Structure is in overflow mode**
  - **Destination is in overflow mode**
    - This particular queue name is in overflow
  - Exit may use these bit settings to reject the placement of messages on the queue
    - Application gets A7 status code

Long / Short message size and LE/DE utilization

- **LGMSGSZ and SHMSGSZ affect LE and DE utilization**

  - If msg<shmsgsz then one LE and needed DE: as many DE=512 as required to save the msg.

    If msg=600 and shmsgsz=800 then will need 1 LE and 2 DE's

  - If shmsgsz<msg<lgmsgsz then one LE and needed DE: as many DE=512 as required to save the msg.

    If shmsgsz=800 msg=1200 lgmsgsz=1024 then will need 1 LE and 3 DE's

  - If msg>lgmsgsz then one LE required for each lgmsgsz and DE as needed:

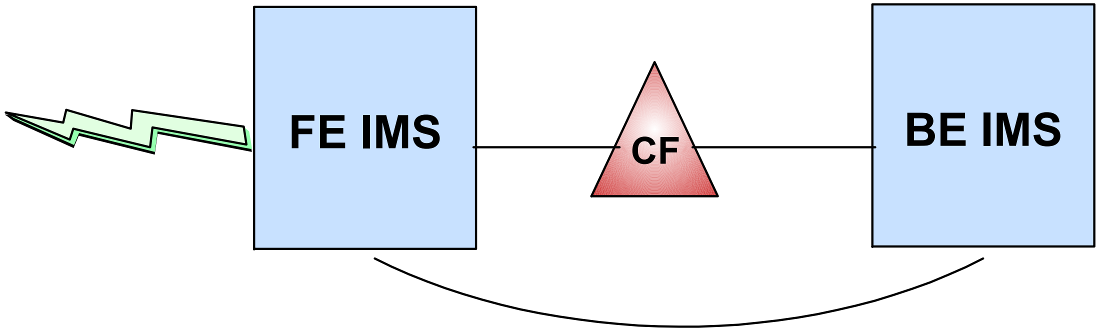
    If msg=5120 and lgmsgsz=1024 then 5 LE and 10 DE (10x512=5120)

APPC/OTMA Transactions

- IMS V6 - dead
  - IMS/ ESA V6 required all APPC/OTMA input messages to process on the *Shared Queues front-end* IMS system
- **IMS V7** asynchronous APPC/OTMA
  - **allocate, send, deallocate - for APPC -**
  - **commit-then-send (commit mode 0) for OTMA**
  - ☛ **input messages can be processed by any IMS in the IMSPlex**
    - ☛ **spawned transactions have to be processed on the same IMS as first message**
- **IMS V8** synchronous APPC/OTMA
  - **allocate, receive and wait - for APPC -**
  - **send-then-commit (commit mode 1) for OTMA**
  - ☛ **input messages and can be processed by any IMS in the IMSPlex - requires RRS**
    - ☛ **spawned transactions have to be processed on the same IMS as first message**

APPC / OTMA Synchronous transactions

"Distributed" Commit



Message Control

Application Updates

RRS co-ordinates the resource manager commit process

- IMS V9 allows prevention of back-end processing
  - Consider your APPC/OTMA workload on FE system

IMS Cold Start

- **IMS Shut Down cleanly**
  - No effect on the shared queue

- **IMS Shut Down abnormal**
  - if IMS COLD START then Indoubt Messages moved from the Lock Queue to the Cold Queue (IMS MRQ to requeue them)
    - Dump comm=(dump information) nnSTRLIST=(STRNAME=msgstrname,(LISTNUM=ALL,ADJ=CAPTURE, EDATA=UNSER))

- **Unresolved UOWE lost after IMS Cold Start**
  - DFS1994 shows, at any system checkpoint if unresolved UOWE's exist and their age

Delete Queue

- **To delete the Queue completely**
  - same effect as IMS cold start in nonSQ
  - Delete MSG-Structures, SRDSs, and CQS-Checkpoint-DS
    - only possible, when no CQS is connected to the Structure
- **to delete messages from the Queue**
  - use QCF to view, copy or delete queue
    - the only way to delete or recover the cold queue
  - /DEQ command has been expanded for APPC and OTMA

Reading CQS Log Records

- **To print CQS log records from the logstream**

```
//CQSERA10    JOB         ........
//STEP1       EXEC        PGM=DFSERA10
//STEPLIB     DD          DSN=IMS.RESLIB,DISP=SHR
//SYSPRINT    DD          SYSOUT=A
//TRPUNCH     DD          SYSOUT=A,DCB=BLKSIZE=80
//SYSUT1      DD          DSN=SYSLOG.MSGQ01.LOG,
                          SUBSYS=(LOGR,IXGSEXIT),
                          DCB=BLKSIZE=32760
//SYSIN       DD          *
CONTROL       CNTL        H=EOF
OPTION        PRINT       EXITR=CQSERA30
END


/*
```

Use the LOGNAME specified in CQSSGxxx.

MVS LOG Offload Data Set

- **Offload data set dynamically allocated by system logger when**
  - The high offload threshold for the CF for a log stream is reached
  - Recovery for a log stream is complete, and the system logger flushes all log data to DASD
  - Structure rebuild occurs for the CF log stream
  - The last connector to the log stream disconnects

- **Log offload data sets automatically deleted by the logger when they no longer hold valid data**
  - 2 SRDS Checkpoint

- **To dump MVS logstream offload dataset**

MVS offload dataset as from MVS logstream definition

```
//job1   JOB ......DFDSS JOB ....
//STP1 EXEC PGM=ADRDSSU,REGION=4096K,TIME=1400
//SYSPRINT DD SYSOUT=*
//IN DD UNIT=xxxx,VOL=SER=yyyyyy,DISP=SHR
PRINT INDD(IN) DS(CQS.mvs.logstearm.offload.A0000000.DATA) TOL(ENQF)
```

MVS Logger

- **Problems with MVS Logger**
  - IMS will hang, if logger can not allocate offload datasets
  - Number of offload dataset may exceed limit
  - write frequent structure checkpoints oor keep a huge amount of offload data
  - structure rebuild may take a long time if structure checkpoints are not written frequently
  - writing structure checkpoints may impact IMS performance

- **Do you really need a recoverable MSG queue structure ?**
  - CF structures are very stable
  - IMS V8 supports system managed structure duplexing
  - MVS Logger is overhead
  - MR0620036318 requests an option to suppress CQS logging

IMS V8 Enhancements applicable to Shared Queues

- System Managed Structure Duplexing & Rebuild
  - MSGQ and EMHQ - primary and overflow
- APPC/OTMA
  - synchronous transactions can be processed by any IMS in the IMSPlex
- Sysplex Terminal Management w. Resource Manager
- Implementation of PARLIM to reduce false schedules
  - APAR also retrofitted to V6 and V7

IMS V9 Enhancements applicable to Shared Queues

- Optional EMHQ and associated constructs if no EMH
- Syntax Checker (required) accepts DFSSQ=
- IVP - Sample CQS application added to CSL Sample
- Disable APPC/OTMA Synchronous on BE
  - DFSDCxxx AOS=N
- Shares Queues with V7 and V8
- CQS Outage Notification at Signon (RC=436)
  - Can be used by DFSGMSG0 exit

Review of Special Considerations

- **MSC and ISC have enhancements in a shared queues environment**
  - Processing MSC or ISC messages on any IMS in SQ Group
  - Cloning IMS systems
- **SERIAL transactions must be processed on front-end**
  - Serial processing not supported across Sysplex
  - Can simulate serial processing with the Non-discardable Message Exit
- **Undefined resources**
  - Dynamic LTERMs still require ETO
  - Dynamic Transactions can be defined by Output Creation Exit
    - For purposes of putting message on queue
    - Be very careful

Review of Special Considerations...

Security is invoked in front-end

- OK, except for dynamic transactions
- Security environment built in back-end dependent region
- Build Security exit available to bypass building security environment if not needed

Logging is different with shared queues

- IMS logs activity on each system
- CQS logs structure activity
  - Uses MVS system logger
- May require multiple logs for each transaction
  - Can be related by UOW ID

Different IMS Cold Start approch

Exits may have special Considerations...

- **Some exits may have special considerations**
  - AOI exits (DFSAOUE0 and DFSAOE00)
  - Fast path Input Edit/Routing Exit (DFSHAGU0)
  - Output Creation Exit (DFSINSX0)
  - Queue Space Notification Exit (DFSQSPC0)
  - Front-end Switch Exit (DFSFEBJ0)
  - Conversational Abnormal Termination Exit (DFSCONE0)
  - Security Exits (DFSCTRN0, DFSCTSE0, and DFSCCMD0)
  - Signon/Signoff/Logoff Exits (DFSSGNX0, DFSSGFX0, DFSLGFX0)