

SAS CONTRIBUTION TO AN INVENTORY MANAGEMENT SYSTEM
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INTRODUCTION

In 1982, Monsanto decided to install an Integrated Manufacturing system to control all related manufacturing activities (forecasting, customer orders, master production schedule, material requirements, shipments, bookkeeping, cost control, purchasing, receiving, etc).

The business standard MRP architecture was adopted and the IBM COPICS package elected to serve as a design guideline.

In mid-1983, Phase 1 was implemented :

Area covered is Finished Product Inventory & Bookkeeping as well as all activities related to Customer Orders.

In mid-1984, Phase 2 will be launched :

Area covered is Production Planning, MRP, Purchasing, Receiving and Raw Material Inventory.

Computer Configuration :

CICS running on IBM 3083 (33k transaction/day)
TSO/SPF running on IEM 4341 (100 users)

PROBLEM STATEMENT

Although the approach of an Integrated Manufacturing system showed significant advantages, it makes information rather difficult to be accessed for specific or one-of user reports and analysis.

Two different needs were identified :

Inquiry Reporting (Phase 1)
More sophisticated data analysis and "thinking" process (Phase 2)

SAS was felt to be a good solution for both problems, provided that ready to use SAS datasets are available and refreshed on a regular basis.

The problem was really : what network should be provided to support each SAS activity.

PHASE 1 - INQUIRY REPORTING

TSO/SPF was not considered to be the best support for inquiry reporting :

- Takes too much resources
- User prime network is CICS
- Is too powerful for such a basic activity
- Technical knowledge is required
- Difficult to share experience (severe ACF2 restrictions)
- Force people to work in interactive mode.

Due to our specific requirements concerning ACF2 and CICS security, we came to develop our own report request package running under CICS.

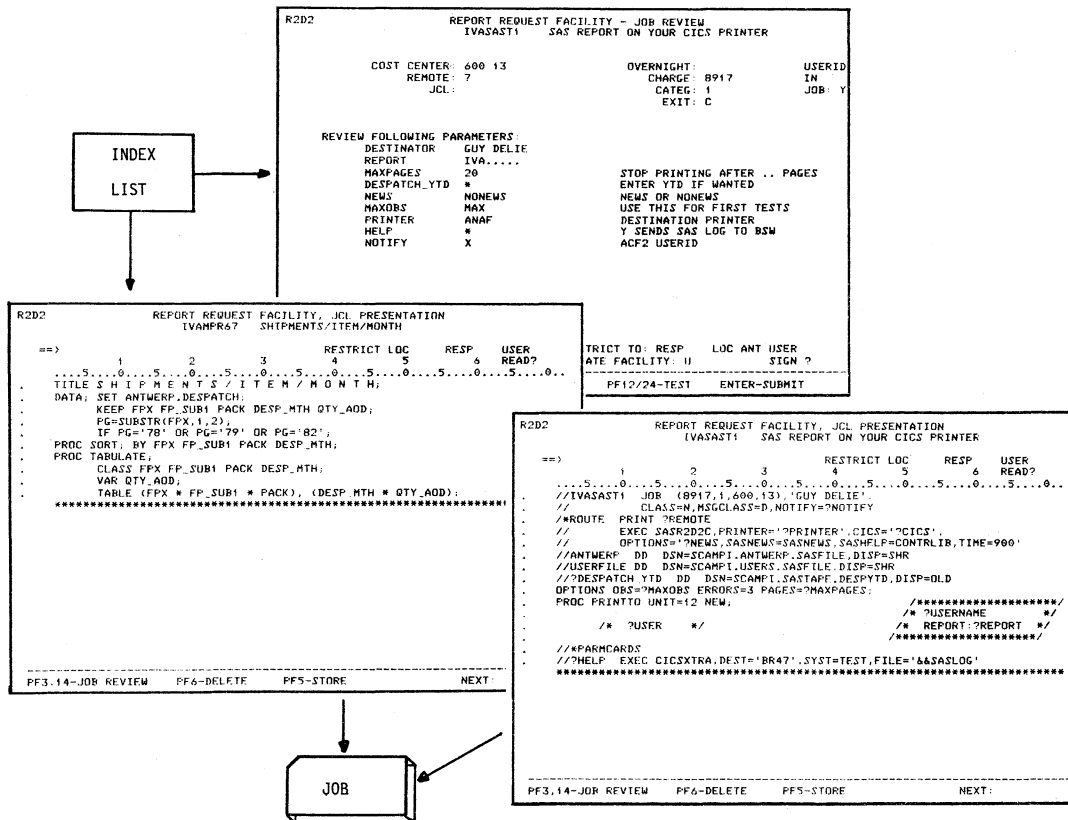
We call it R2D2

R2D2 allows users with no technical knowledge to submit batch jobs in which they may include their own SAS statements.

R2D2 is in some way similar to SPF editor and skeleton facilities but working under CICS and using unique VSAM file.

A job is a joint effort :

- MIS project team is responsible to create, maintain job skeletons and to define variables specific to that job.
- User is responsible to provide values for these variables and to create, maintain their SAS reports. (JCL's prohibited)



Although R2D2 is not too sophisticated, it proved to be well accepted by users and highly productive.

Main advantages are :

- SAS strengths (mainly in dataset manipulation)
- Works under CICS
- Self documented and up to date datasets
- Wide variety of applications (80 SAS datasets)
- Minimum training required
- Program exchangeability (between groups or sites)
- Continous upgrade thru a built-in communication feature (C3PO)
- Requires minimum maintenance (MIS project team)
- Low running cost (batch and on-line)
- User himself decides what reports he wants to protect

PHASE 2 - RESEARCH / PLANNING ACTIVITIES

Master Production schedules are designed to be several satellite systems feeding back the Central Planning Data Base.

These satellite systems are developed by the user with significant support from MIS project team.

Satellite systems are based on SAS/TSO, using the same ready-to-use datasets as created for Phase 1.

More SAS facilities are used in Phase 2

- SAS FSP and mainly FSCALC
- SAS IMS/DL1 with shared DB option

This design approach was possible when FSCALC was available. It is considered to be a very powerful procedure and easy to interface with other SAS programs.

Our only concern is Response Time.