The GGG project
Subproject "Operation/Automation"

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Contents

The operation and automation subproject

The GGG Operation and Automation subproject document is divided in the following parts:

1 **Subproject specification**

2 **Present situation**

3 **Long term objectives**

4 **Product plan**

Subproject specification

Background

The GGG Operation and Automation subproject is set up according to the GGG project specification and will adhere to the same strategical goals.

Our customers have need for similar data center services to be able to move workload between data centers and to get backup possibilities between data centers.

A standardization of the data centers is strategic and improved efficiency, quality, and services will be achieved by better usage of installed capacity in terms of hardware and software and by better use of skill from technician and operation personell at the 3 data centers.

The purpose with the Operation & Automation subproject is to standardize services, products and methods for Operations, technical support and data exchange and increase the cooperation between the data centers.

Tasks

1 Describe the present situation at the 3 data centers, with focus on differences between the data centers.

2 Define and agree on long term objectives.

3 Produce a product plan which describes planned activities to the end of 1992.

Objectives

- Follow the common strategic GGG project goals.
- Define and agree on what products that shall be used for systems, subsystems, and network operation from Operations perspective. Strategic and conceptual products with an expected long lifetime should be preferred.
- Provide an operational environment where new, or moved, workload fits in with a minimal of resources required for customization.
- Provide standards and methods where whole, or part of systems, subsystems, or network may be moved/implemented to one of the other two data centers for backup purposes in a standardized manner with a minimal of resources required for customization in operation and automation procedures.
- Volvo Data's established and documented standards such as JCL, job classes, and output classes should be implemented in all 3 data centers.
- Provide methods and tools to completely or partly operate an remote unattended data center.

Staff

Operation and automation affects many product areas or are affected by other product areas. In the responsibility matrix below, are only those products named where Mexpack, Operate, or Automate responsibles are located within Operation.

Category description

Product responsible (**Product**).

Global responsibility concerning main technical questions, principles, quality goals and financial and accounting questions.

Mexpack responsible (**Mexpack**).

Technical responsibility to specify, manufacture and deliver the product.

Operate responsible (**Operate**).

Responsibility to install the mexpack delivered product and establish proper operation routines to run the subsystem.

Coordinate responsible (**Automate**).

Responsible to coordinate implementation of automation procedures regardless of product areas.

Program products, staff for automation

Product	VD	VEDa	VDNA
Subproject:	H. Robertsson	S. De Bleecker	K. Becraft
OPC/A			
Product :	Dept. 2140		
Mexpack :	Dept. 2510		
Operate :	K. Hansson	N. De Meyere/ W. Clement	K. Becraft
Automate:	K. Hansson	S. De Bleecker	K. Becraft
NetView			
Product :	Dept. 2140		
Mexpack :	Dept. 2510		
Operate :	Dept. 2110	C. Vandevelde	B. Evans
Automate:	Dept. 2103	S. De Bleecker	K. Becraft
AOC/MVS			
Product :	Dept. 2140		
Mexpack :	Dept. 2510		
Operate :	J-E. Hornfeldt	S. De Bleecker	K. Becraft
Automate:	J-E. Hornfeldt	S. De Bleecker	K. Becraft
AOEXPERT/MVS			
Product :	Dept. 2140		
Mexpack :	Dept. 2510		
Operate :	J-E. Hornfeldt	S. De Bleecker	K. Becraft
Automate:	J-E. Hornfeldt	S. De Bleecker	K. Becraft
TIRS components (for AOEXPERT/MVS)			
Product :	D. Stenmark		
Mexpack :	Dept. 2510		
Operate :	Dept. 2103	N/A	N/A
Automate:	Dept. 2103	N/A	N/A
TSCF			
Product :	Dept. 2120		
Mexpack :	Dept. 2510		
Operate :	H. Robertsson	S. De Bleecker	K. Becraft
Automate:	H. Robertsson	S. De Bleecker	K. Becraft
Info Management			
Product :	Dept. 2140		
Mexpack :	Dept. 2510		
Operate :	A. Yilmaz	N/A	D. Joebgen
Automate:	M. Erkenstam	S. De Bleecker	K. Becraft

Other packages and staff for automation

Product	VD	VEDa	VDNA
EXTAS			
Operate:	S-A. Bondesson	N/A	N/A
HELP			
Automate:	M. Erkenstam	S. De Bleecker	K. Becraft
AOSIMS			
Automate:	J. Ahlberg	S. De Bleecker	K. Becraft
AMF			
Automate:	M. Erkenstam	S. De Bleecker	K. Becraft
Shadow applications			
Automate:	J. Ahlberg	S. De Bleecker	K. Becraft
AS/400 operation			
Automate:	C. Hultstrand	S. De Bleecker	K. Becraft

Present situation

A description of the present situation at the 3 data centers with focus on differences between the data centers. In purpose to give the discussion a platform to start from, the GGG solution is supposed to be like the VD solution.

Brief description of major differences between the data centers

Task	VD	VEDa	VDNA C1	VDNA R1
Tool for Job scheduling:	OPC/A	OPC/A	Flow	OPC/A
Management by exception:	Yes	Partly	No	Partly
Tool for System automation:	NetView/ Proper	NetView	Automate	OPS/MVS
Tool for System analysis:	Omegamon	N/A	Omegamon	Omegamon
Tool for SYSLOG analysis:	SDSF	SDSF	IOF/SMR	SDSF
Tool for Remote printing:	VPS	VPS	VPS	JES328X
Responsible for JCL:	Appl.	Oper.	Oper.	Appl.
Tool for Problem mgmt:	Info	N/A	Info	Info
Dedicated Help Desk:	Yes	No	Yes	Yes
Using Help for Info:	Yes	Limited	Limited	Limited
Using customized MPF:	Yes	Yes	No	Yes
Using SOF for automation:	No	Yes	No	Yes
System alerting using NPDA:	Yes	No	No	No
Running NLDM (scope):	N/A	Limited	High	high
Using ACF2 for NetView	Yes	No	No	No
External tape system:	Extas	No	No	No

Present situation at VD

Volvo Data's operation of computer environments is after years of work, efforts, attention, a very well functioning unit in comparison with most of other data installations. To get further in rational operation, VD is very well positioned for a structure as SystemView with its implementations in the operation area.

Characteristics:

- High degree of automation.
- Management by exception with various alarming functions.
- All batch production workload mostly managed by OPC.
- System automation through NetView and Proper, where Proper activities later will be migrated to AOC/MVS.
- System analysis through Omegamon/MVS.
- Network (SNA) automation through NetView.
- Master functions for IMS and network through NetView autotasks.
- Good HW/SW platform for further automation.
- MPF and automation tables in NetView highly customized.
- Well functioning Help Desk but with need of assisting tools to be able to handle the complexity of today.
- High usage of AMF to simplify maintenance of automation components.
- Responsible for management of four local and one remote AS/400.

VD differences compared to the GGG solution

As the GGG solution will be based on VD's implementations of products and solutions, nothing except Proper can be identified as differences, in exception to VD's local needs.

- For system automation Proper has been used for 6 years. This product will be replaced by AOC/MVS during 1992.

Present situation at VEDa

As a Mexpack customer since many years, VEDa has a similar operation of their system as VD. Depending on complexity, size, and local need, VEDa does not have same tools as VD but has instead, for some areas, developed own solutions.

For automation of the operation, VEDa started a year ago and are making progress rapidly. VEDa miss today tool for problem management, tools for startup, monitoring, recovering, and shutdown of subsystems (with respect to SOF that are taking care of some procedures).

In the batch area, VEDa has developed own JCL solutions, see appendix A. To get a common OPC/A and JCL structure for the 3 data centers, this may require a lot of resources to unify. This is a task that should not start until all standards for JCL etc. have been agreed and established.

Characteristics:

- Has recently started with automation.
- Management through TSO, NetView and MCS consoles.
- All batch production workload mostly managed by OPC.
- System automation through NetView.
- Miss Omegamon/MVS.
- Network (SNA) automation through NetView.
- Master functions for IMS through NetView autotasks and network automation through NetView operator station tasks.
- MPF customization activity is going on.
- No responsibility for managing AS/400's at VEDa but on its way.
- SOF is still very important but SOF contents is planned to be migrated to NetView.

VEDa differences compared to the GGG solution

- Has no tool installed in addition to NetView (and SOF) for system automation.
- Has not Omegamon/MVS
- Has not any problem management system such as Info Management.
- Are not using EXTAS for handling of external tapes.
- Has own JCL generator (G125) which generates extra steps in all JCL to take care of IMS database conflicts between IMS and batch, DB2 enqueue/dequeue conflicts, and substitutes for HSM.

- Will probably need AOEXPERT/MVS, with prerequisites, during 1993.
- Will perhaps need NetView GMF, NPM, and LAN Network Manager during 1993, or perhaps 1992.

Present situation at VDNA

After consolidation of the car system from VNA, VDNA logically has 2 environments, the truck and the car system. These systems have completely different backgrounds and varies in behaviour a lot from different perspectives.
The car system has been a Mexpack system since many years and the system is entirely customized very similar to systems at VD and VEDa. The operation of the system is very similar to VD's with respect to the smaller size and local needs.
The truck system is very different in comparison with the other involved systems due to known reasons. Customization of the system, methods used, chosen tools, size, local needs, and the operation differs a lot.

Characteristics:

- No defined Help Desk interface.
- Partly high degree of automation.
- Management through MCS consoles.
- All batch production workload managed by the Flow system (in-house developed) in the trucks system and by OPC/A in the car system.
- JCL structure in the truck system separates in many forms from the car system and normal standards.
- System automation through Automate/MVS in the truck system and through OPS/MVS in the car system. Both the truck and car system have some system automation features in NetView.
- System analysis through Omegamon/MVS.
- Network (SNA) automation through NetView.
- Master functions for IMS and network through NetView operator station tasks.
- MPF not used in the truck system, rather high degree of customization in the car system.
- Production workload managed by OPC/A in the car system for remote AS/400's.
- No responsibility for operators to manage AS/400's at VDNA.
- Responsible for management of two Serie/1's (in Rockleigh).
- Remote operators on Hyperchannel extender to New River Valley and Orrville.
- SRM hardly not used for load balancing and tuning in the truck system. Instead an inhouse coded solution is developed in Automate/MVS.

VDNA differences compared to the GGG solution

- Are running the truck system in a complete different way than other involved systems.
- Has two different tools for system automation, Automate/MVS and OPS/MVS, that both differ from the final solution.
- Are not using OPC/A in the truck system but will convert all jobs before the end of March 1992.
- Will probably need AOEXPERT/MVS, with prerequisites, during 1992.
- Will perhaps need NetView GMF during 1993, or during 1992.
- SRM not customized as at VD that may affect automation as well as other areas.

Long term objectives

To get the 3 data centers of Volvo Data to be as efficient as possible and fulfil the objectives of the GGG project, and to get advantages of new technologies, products, and solutions in general, its very important to use as similar operation environment as possible.

The data centers consists of 3 physical environments but logically there are 4 different operational environments; VD, VEDa, the VDNA truck system, and the VDNA car system.

As VD, VEDa, and the VDNA car system since many years are based on products and customizations delivered through Mexpack, these systems are in general rather similar. Depending on workload, complexity, organisation differences, local requirements and other factors, the operational and automation environments are varying.
The VDNA truck system, that has not enjoined Mexpack and which has a different background, is completely different compared with the other systems.

Realizing long term objectives may differ between data centers and different areas which will require various investment costs due to complexity, need, and size.

Objectives:

1 An overall usage of current naming conventions according to VD's naming standard documents and according to methods and standards for automation.

2 To use same operation methodology for OPC/A and JCL to be able to move or copy applications between data centers with a minimum of efforts.

3 To establish similar operation and Help Desk environments regarding products and methodology.

4 To implement VD's way of operating MVS systems with subcomponents at VEDa and VDNA.

5 To use common operation procedures, handbooks, with a common source, and with automatic maintenance/distribution facilities periodically or after updates.

6 To use common definitions, user exits, and other user code in subsystems wherever its possible, to avoid implementation and maintenance problems. Enhancements or changes should be easy to do.

7 To technically and operationally have system environments that provides several levels of remote operation.

8 From operation perspective, same procedures and methodololgy for problem and change activities should be used.

9 To extend and enhance existing VD infrastructure, AMF, for automatic maintenance/distrbution of materials such as clists, panels, MPF lists, NetView automation tables, NetView user exits, Netview, code point tables and other automation parts.

10 Same automation and operation baseproducts in use in all systems:

- OPC/A
- NetView
- AOC/MVS
- Omegamon/MVS
- SDSF
- MIM/MIA (when needed)
- VPS

11 Same automation and operation products in use in all systems but depending on complexity, need and investment costs:

- AOEXPERT/MVS w/TIRS Runtime/370
- TSCF (remote operation)
- NetView GMF
- NPM
- LAN Manager

12 Same automation and operation features in use in all systems but not necessary with installed products in respective data center.

- Info System, Info Management
- TIRS builder/370, TIRS Development/2.

13 General operational features for managing entire systems, subsystems, network, batch production, or other components:

- Methods and standards
- AMF
- HELP
- EXTAS
- AOSIMS
- Shadow applications
- Clists (packages or single clists)

Product plan

A product plan, primarly including activities until end of 1992, that leads to standardized automation and operation environment at the 3 data centers with respect to complexity, size, and local need.

This product plan is divided into 3 different parts;

- A nearterm activity plan to build up same, or very similar, product and solution base to facilitate next step. The intention with this nearterm activity plan is to be positioned and to build up an infrastructure to facilitate later work.

- The 1992 product and activity plan.

- A long term plan for 1993 and beyond. The purpose with this plan is not to stake out every activity that should be carried on, which is impossible, instead it should give an idea of possible known long term activities that will planned in detail later.

Nearterm activities

These activities are categorized as immediate and objective is to start December 1 if the complete plan is approved by the steering board meeting in the end of November. Objective is to have these activities finished before the end of April 1992.

VD nearterm activities

Activities.

- Support VEDa and VDNA whenever needed for this GGG sub-project.
- Debug, maintain, and develop AOC/MVS with automation features.
- Implement NetView Graphic Monitor Facility (GMF) in production for monitoring of the SNA network.
- Implement Target System Control Facility (TSCF) in production for monitoring (w/re-IPL) of target systems from focal point.
- Implement NetView Bridge in the production systems for automatic problem reporting to Info Management.

- Installation of NetView 2.2.
- Implement user alarm functions, in addition to OS/400 provided alarms, in local and remote AS/400's for transport to NetView.
- Joint Program in the AO/AI area.
- Implement Omegamon II for MVS in the production systems.
- Possible evaluation of OmegaView for focal point support of multiple Omegamon/MVS.
- Operation/automation work of the recently setup LAN environments.
- Automation development work in the Interlink and Newbridge areas.
- Continuous development of automation procedures.

VEDa nearterm activities

Following **activities** has been agreed by VD and VEDa to be finished before the end of March (agreed priority within paranthesis):

- Setup the NetView environment as V-D's, i.e. Autotasks (**1**)

  Estimated work - VD: - **mw** VEDa: **0.5 md**
  Estimated starttime:

- Start to use the STATMON component of NetView(**1**)

  Estimated work - VD: **2 md** VEDa: **3 md**
  Estimated starttime:

- Follow naming conventions and library conventions for NetView (**1**)

  Estimated work - VD: - **mw** VEDa: **2 md**
  Estimated starttime:

- Setup AOSIMS demo for test. Implement it in production (**2**)

  Estimated work - VD: **mw** VEDa: **mw**
  Estimated starttime:

- Enable ACF2 security checking in NetView (**2**)

  Estimated work - VD: **2 mw** VEDa: **3 md**
  Estimated starttime:

- Implement 'send-Memo' in NetView automation procedures (**2**)

  Estimated work - VD: **mw** VEDa: **mw**
  Estimated starttime:

- Implement automatic reorganisation of NLDM and NPDA VSAM clusters (**2**)

  Estimated work - VD: **1 md** VEDa: **2 md**
  Estimated starttime:

- Implement shadow applications in production (**3**)

  Estimated work - VD: **mw** VEDa: **mw**
  Estimated starttime:

- Migrate SOF activities to NetView and de-install SOF (**3**)

  Estimated work - VD: **2 md** VEDa: **2 mw**
  Estimated starttime:

- Establish automatic distribution of clists from VEDa to the NetView clist repository at VD (**3**)

  Estimated work - VD: **mw** VEDa: **mw**
  Estimated starttime:

- Implement VD's AS/400, mainframe based, management solutions when needed (**3**)

  Estimated work - VD: **mw** VEDa: **mw**
  Estimated starttime:

In addition to the items above, following items should be completed in the short term:

- Start to run NetView as a "true" MVS subsystem.

  Estimated work - VD: **1 md** VEDa: **2 md**
  Estimated starttime:

- Setup weekly automation follow up meetings with representatives from Systems support and Operations to talk together and get automation matters discussed and sanctioned.

  Estimated work - VD: - **mw** VEDa: **1 mw**
  Estimated starttime:

- Implement VD's color setting philosophy for MCS consoles.

  Estimated work - VD: **mw** VEDa: **mw**
  Estimated starttime:

VDNA nearterm activities

Because of all differences between the truck and car systems, highest priority should be to put all efforts on making the truck system to get similar behaviour as other involved systems. Necessary work that has to be done should start as soon as possible or when its appropriate for involved people.
The car system, as mentioned earlier in this document, is very close to the target and should be used as starting-point as well as the demo system installed earlier this year.
This subproject description points out the direction in many ways and areas and support will be given by involved people at VD.

Following **activity** is already planned, and agreed, to be finished before the end of March 92.

- Conversion of all batch production from the Flow system to OPC/A.

  Estimated work - VD: **1 mw** VDNA: **>20 mw**
  Estimated starttime:

Following **activities** should be started up as soon as possible after decision:

CONSOLE MANAGEMENT

- Implement VD's MPF list and MPF exits. If necessary the MPF list should be customized.

  Estimated work - VD: **mw** VDNA: **mw**
  Estimated starttime:

- Implement VD's color setting philosophy for MCS consoles and Omegamon/MVS.

  Estimated work - VD: **1 md** VDNA: **3 md**
  Estimated starttime:

- Stop adding new automation solutions in Automate/MVS, OPS/MVS, and SOF, these products should be freezed.

  Estimated work - VD: **1 mw** VDNA: **mw**
  Estimated starttime: **N/A**

- Migrate SOF activities to NetView and de-install SOF (3)

  Estimated work - VD: **mw** VDNA: **mw**
  Estimated starttime:

- Introduce Omegamon/MVS as a system analysis tool to the operators.

  Estimated work - VD: **mw** VDNA: **mw**
  Estimated starttime:

OPC/A

- Introduce VD's JCL, general jobclass, and general output class standards as far as possible when converting from the Flow system to OPC/A.

  Estimated work - VD: **mw** VDNA: **mw**
  Estimated starttime:

NetView

- Implement V2 as soon as its available through Mexpack.

  Estimated work - VD: **mw** VDNA: **mw**
  Estimated starttime:

- Follow naming conventions and standards for concatenation of NetView libraries.

  Estimated work - VD: **mw** VDNA: **mw**
  Estimated starttime:

- Start to run NetView as a "true" subsystem".

  Estimated work - VD: **mw** VDNA: **mw**
  Estimated starttime:

- Implement VD's user exits in NetView when upgrading to V2R1.

  Estimated work - VD: **mw** VDNA: **mw**
  Estimated starttime:

- Setup the NetView environment as V-D's, i.e. Autotasks (**1**)

  Estimated work - VD: **mw** VDNA: **mw**
  Estimated starttime:

- Setup VD's way of creating, maintaining, and distribution clists.

  Estimated work - VD: **mw** VDNA: **mw**
  Estimated starttime:

- Implement VD's code points. Existing VDNA code points should first be merged into VD's. Will be driven by VD.

  Estimated work - VD: **mw** VDNA: **mw**
  Estimated starttime:

- Filter out unrelevant alerts in NPDA.

  Estimated work - VD: **mw** VDNA: **mw**
  Estimated starttime:

- Establish NVC11 as focal point for alerts.

  Estimated work - VD: **mw** VDNA: **mw**
  Estimated starttime:

- Implement VD's automation tables.

  Estimated work - VD: **mw** VDNA: **mw**
  Estimated starttime:

- Start to use autotasks as masters for IMS and VTAM

  Estimated work - VD: **mw** VDNA: **mw**
  Estimated starttime:

- Implement VD's clists for managing IMS sessions.

  Estimated work - VD: **mw** VDNA: **mw**
  Estimated starttime:

- Implement AOSIMS for extended IMS management.

  Estimated work - VD: **mw** VDNA: **mw**
  Estimated starttime:

- Implement alerting to systems programmers and managers using Memo.

  Estimated work - VD: **mw** VDNA: **mw**
  Estimated starttime:

- Consider running NLDM with global trace on.

  Estimated work - VD: **mw** VDNA: **mw**
  Estimated starttime:

- Start to implement VD's general clists and panels.

  Estimated work - VD: **mw** VDNA: **mw**
  Estimated starttime:

AUTOMATION IN GENERAL

- Establish automatic distribution of clists from VDNA to the NetView clist repository at VD (3)

  Estimated work - VD: **mw** VDNA: **mw**
  Estimated starttime:

- Upgrade Info System/Info Management to the Mexpack version.

  Estimated work - VD: **mw** VDNA: **mw**
  Estimated starttime:

- Setup weekly automation follow up meetings with representatives from Systems support and Operations to talk together and get automation matters discussed and sanctioned.

  Estimated work - VD: **mw** VDNA: **mw**
  Estimated starttime:

- Establish AMF for exchange of automation materials

  Estimated work - VD: **mw** VDNA: **mw**
  Estimated starttime:

- Implement the shadow applications package.

  Estimated work - VD: **mw** VDNA: **mw**
  Estimated starttime:

1992 activity and product plan

VD activity and product plan

VEDa activity and product plan

Activities:

- Implement VD's OPC/A-exit DRKUX007 with automatic opening of problem records in Info Management with information about abended jobs and with alerts to NetView.

  Estimated work - VD: **mw** VEDa: **mw**
  Estimated starttime:

- Implement automatic problem reporting using NetView Bridge (requires Info System 4.2.2).

  Estimated work - VD: **mw** VEDa: **mw**
  Estimated starttime:

- Implementation of NetView V2R2 through Mexpack.

  Estimated work - VD: **mw** VEDa: **mw**
  Estimated starttime:

- Implement AOC/MVS as system automation tool.

  Estimated work - VD: **mw** VEDa: **mw**
  Estimated starttime:

- Customization of AOC/MVS.

  Estimated work - VD: **mw** VEDa: **mw**
  Estimated starttime:

- Implementation of VD's clist packages where it suites. Popular names:
  - "Time limit exceeded"

    Estimated work - VD: **mw** VEDa: **mw**
    Estimated starttime:

  - "Waiting for dataset(s)"

    Estimated work - VD: **mw** VEDa: **mw**
    Estimated starttime:

  - "OPC/A long duration for job"

    Estimated work - VD: **mw** VEDa: **mw**
    Estimated starttime:

  - "Dynamic set of initiators/SMF"

    Estimated work - VD: **mw** VEDa: **mw**
    Estimated starttime:

  - "Control of restarted transmitters"

    Estimated work - VD: **mw** VEDa: **mw**
    Estimated starttime:

  - "Check of job start error/abend for non-OPC/A jobs"

    Estimated work - VD: **mw** VEDa: **mw**
    Estimated starttime:

  - "Special class services with swap on time"

    Estimated work - VD: **mw** VEDa: **mw**
    Estimated starttime:

  - "Purge of sysout"

    Estimated work - VD: **mw** VEDa: **mw**
    Estimated starttime:

- "Automatic shutdown for maintenance"

  Estimated work - VD: **mw** VEDa: **mw**
  Estimated starttime:

- "PDS maintenance on weekends"

  Estimated work - VD: **mw** VEDa: **mw**
  Estimated starttime:

- "Exec failure trapping"

  Estimated work - VD: **mw** VEDa: **mw**
  Estimated starttime:

Investments

As VEDa's budget process were finished before VD's and VDNA's, no proposal were done by VD to VEDa for 1992 but **AOC/MVS** is budgeted.

Program products

- 5685-151 AOC/MVS Version 1 Release 1 from August

Hardware:

- -

Other:

- Installation of AOC/MVS may require education. If this should be realized through external classes or by VD personell has not yet been discussed. Under all circumstances this item will bring costs.
- Suggestion: VEDa should plan to have automation responsible at VD one, or two, weeks for planning and education purposes during 1992.

VDNA activity and product plan

Activities:

- Provide the OPC/A Request System (user interface) to VCNA and VGHT.

  Estimated work - VD: **N/A** VDNA: **4? mw**
  Estimated starttime:

- Implement VD's OPC/A-exit DRKUX007 with automatic opening of problem records in Info Management with information about abended jobs and with alerts to NetView.

  Estimated work - VD: **mw** VDNA: **mw**
  Estimated starttime:

- Implementation of NetView V2R2 through Mexpack.

  Estimated work - VD: **mw** VDNA: **mw**
  Estimated starttime:

- Implement AOSIMS for automatic recovery of predefined areas.

  Estimated work - VD: **mw** VDNA: **mw**
  Estimated starttime:

- Implement AOC/MVS as system automation tool.

  Estimated work - VD: **mw** VDNA: **mw**
  Estimated starttime:

- Develop alternate solutions for the existing IDMS-OPS/MVS automation solutions.

  Estimated work - VD: **mw** VDNA: **mw**
  Estimated starttime:

- Migration of automation solutions from Automate/MVS and OPS/MVS to AOC/MVS. De-install Automate/MVS and OPS/MVS after after completion.

  Estimated work - VD: **mw** VDNA: **mw**
  Estimated starttime:

- Implement AOEXPERT/MVS with prerequisites (the different TIRS components).

Estimated work - VD: **mw** VDNA: **mw**
Estimated starttime:

- Setup and customize for only 1 Info Management system and merge contents of the 2 Info Management system into 1 single database.

  Estimated work - VD: **mw** VDNA: **mw**
  Estimated starttime:

- Implement automatic problem reporting using NetView Bridge (requires Info System 4.2.2).

  Estimated work - VD: **mw** VDNA: **mw**
  Estimated starttime:

- Provide New River Valley and Orrville with console interfaces through NetView instead of the Hyperchannel attached MCS consoles.

  Estimated work - VD: **mw** VDNA: **mw**
  Estimated starttime:

- Implementation of VD's clist packages where it suites.

  Estimated work - VD: **mw** VDNA: **mw**
  Estimated starttime:

  Popular names:

  - "Time limit exceeded"

    Estimated work - VD: **mw** VDNA: **mw**
    Estimated starttime:

  - "Waiting for dataset(s)"

    Estimated work - VD: **mw** VDNA: **mw**
    Estimated starttime:

  - "OPC/A long duration for job"

    Estimated work - VD: **mw** VDNA: **mw**
    Estimated starttime:

  - "Dynamic set of initiators/SMF"

Estimated work - VD: **mw** VDNA: **mw**
Estimated starttime:

- "Control of restarted transmitters"

  Estimated work - VD: **mw** VDNA: **mw**
  Estimated starttime:

- "Check of job start error/abend for non-OPC/A jobs"

  Estimated work - VD: **mw** VDNA: **mw**
  Estimated starttime:

- "Special class services with swap on time"

  Estimated work - VD: **mw** VDNA: **mw**
  Estimated starttime:

- "Purge of sysout"

  Estimated work - VD: **mw** VDNA: **mw**
  Estimated starttime:

- "Automatic shutdown for maintenance"

  Estimated work - VD: **mw** VDNA: **mw**
  Estimated starttime:

- "PDS maintenance on weekends"

  Estimated work - VD: **mw** VDNA: **mw**
  Estimated starttime:

- "Exec failure trapping"

  Estimated work - VD: **mw** VDNA: **mw**
  Estimated starttime:

- Implement VD's AS/400, mainframe based, management solutions when needed (**3**)

  Estimated work - VD: **mw** VDNA: **mw**
  Estimated starttime:

Investments

Following **budget proposal** were made to VDNA in October for installation of respective component during 1992.

Program products:

- 5685-138 NetView Version 2 Release 2 from early 1992
- 5685-151 AOC/MVS Version 1 Release 1 from August
- 5695-057 AOEXPERT/MVS Version 1 Release 1 from October
- 5685-138 TIRS Runtime/370 from October
- 5685-138 TIRS Builder/370 from October if needed
- 5685-138 TIRS Development/2 from October if needed
- OS/2 licenses for PS/2s

Hardware:

- 2*PS/2 model 70-121 or other appropriate machines at the time of ordering.

Other:

- Installation of the program products above may require education. If this should be realized through external classes or by VD personell has not yet been discussed. Under all circumstances this item will bring costs.
- Suggestion: VDNA should plan to have automation responsible VD one, or two, weeks for planning and education purposes during 1992.

1993, and beyond, activity and product plan

VD, 1993 activity and product plan

VEDa, 1993 activity and product plan

Activities:

- Implement NetView V2R3.
- Implement Omegamon II for MVS for system analysis.
- Implement AOEXPERT/MVS with prerequisites (the different TIRS components).
- Possible (depending on need and costs) implementation of Automated Network Operations/MVS (automation tower).
- Possible (depending on need and costs) implementation of IMS Automation Option/MVS (automation tower).
- Possible evaluation of Site Monitor, from IBM, or similar product.

Program products:

- 5695-057 AOEXPERT/MVS Version 1 Release 1
- 5685-138 TIRS Runtime/370
- 5685-138 TIRS Builder/370 if needed
- 5685-138 TIRS Development/2 if needed
- 5756-265 Automated Network Operation/MVS if needed
- 5695-063 IMS Automation Option/MVS if needed
- Omegamon II for MVS
- Site Monitor or similar product
- OS/2 licenses for PS/2s

Hardware:

- PS/2 model 70-121 or other appropriate machines at the time of ordering.

Other:

- New products or releases may require education. VEDa should reflect this in the budget for 1993 to aquaint necessary skill for affected personell.

- New products or releases require manuals. VEDa should reflect tis in the budget for 1993.
- Suggestion: Once per year, VEDa should plan to have automation responsible at VD one, or two, weeks for planning and education purposes.

VDNA, 1993 activity and product plan

Activities:

- Implement NetView V2R3.
- Possible (depending on size of the VDNA network, need and costs) implementation of Automated Network Operations/MVS (automation tower).
- Possible (depending on need and costs) implementation of IMS Automation Option/MVS (automation tower)
- Possible (depending on need and costs) implementation of CICS Automation Option/MVS (automation tower).

Program products:

- 5756-265 Automated Network Operation/MVS if needed
- 5695-063 IMS Automation Option/MVS if needed
- 5695-064 CICS Automated Option/MVS if needed
- Site Monitor or similar product
- OS/2 licenses for PS/2s if needed

Hardware:

- Additional PS/2's if needed.

Other:

- New products or releases may require education. VDNA should reflect this in the budget for 1993 to aquaint necessary skill for affected personell.
- New products or releases require manuals. VDNA should reflect tis in the budget for 1993.
- Suggestion: Once per year, VDNA should plan to have automation responsible at VD one, or two, weeks for planning and education purposes.

Appendix A. Further investigations

This appendix contains operation and automation areas to be investigated to get similar operation enviroment and/or functionality.

Operation procedures

Current Operator Procedures (or handbbook), at VD are stored and maintained. It is written in Swedish and printed once a week or when needed. Objective at VD has been to distribute the procedures to a LAN based workstation periodically where information is retrievable in addition to printed edition.

Objective should be to have one single Operator Procedures covering all data centers both for general and local circumstances. Current Operator Procedures at VD should be translated to English and cover all local procedures at VEDa and VDNA. The GGG project will force an unified and agreed solution.

Status: Investigation started to find an appropriate method one common source with automated distribution.

Methods and Standard document

Current Methods and Standards document have been developed at VD during the last years. This document describes current strategies, concepts, areas, and programs used and their roll. The document describes in depth naming conventions, clist standards, WTO and alert standards, and other automation matters.

The document Methods and Standards is a document that continuously is being evolved. To do this in a common way, requires some kind of proposal and review routine.

Status: Investigation has not been started yet.

OPC/A and JCL standard

Local customization VEDa

Due to lack of HSM and to special needs for batch jobs to run concurrently with IMS and DB2, VEDa has developed their own JCL generator for Applications. This generator adds extra JCL steps in a large number of production JCL's. They are involved in 4 major areas:

- SAVDSK is a substitute for HSM and is included in a large number of batch JCL's.
- CNTDAT/DELDAT is used to check input, allocation of disc files, and make jobs restartable without intervention.
- RUNVIS is a modified DBCHANGE and is used to start/stop databases in IMS from batch jobs. RUNVIS also detects conflict situations. RUNVIS is included in approx. 500 BMP's and 1500-2000 batch JCL's.
- DB2ENQ/DB2DEQ is similar to RUNVIS but for DB2. They put enqueues/dequeues on DB2 and to stop/start transactions in the intermix of batch and online to avoid abends. DB2ENQ/DB2DEQ is included in approx. 2000 batch JCL's.

These local modifications are deeply involved in most of all OPC/A controlled batch and may affect the applications portability objective.

Status: Investigation has not been started yet.

Extensions/improvements

VDNA has developed 2 extensions to OPC/A that could be of big interrest for VD and VEDa.

- OPC/A Request System (user interface) that simplifies OPC/A tasks for users when adding occurences to the OPC/A current plan or to the long term plan.
- Facility to control batch activities in AS/400's.

Status: Investigation has not been started yet.

Output

The output area is not covered in the the original project specification but should/must be implemented for the product and activity plan for 1993 to be able to fulfil the objects for the project. This applies to program products, methods, production JCLs, operating procedures, and is valid for both print and microfiche production.

Status: To be covered by the product and activity plan for 1993.

Job and output classes

As stated earlier in this document and that also has been agreed, VD's standard for job and output classes should be used at all data centers. These standards include some VD unique classes that will not be valid for VEDa and VDNA and which in turn have need for local unique classes. To get a common solution with general and local classes an investigation should be started.

Status: To be investigated as soon as possible. plan for 1993.

New River Valley/Orrville

The VGHT plants in NRV and ORV are located remote from VDNA. Each plant is logically a RJE site with total control of respective workload. Their equipments, i.e. MCS consoles are locally attached via Hyperchannels to C101. They manages their own initiators and will probably persist with that. The NRV and ORV locations have mainly 2 requirements:

- Must be able to issue MVS/JES2 commands.
- To have printer control.

These requirements will rather easily be resolved with NetView interface and TSO/SDSF sessions.

A potential problem may be that they are, more or less, acting as stand alone data centers (historical reasons) with own staff for each different task and they have their own standards etc.. They will probaly not use OPC/A for batch control but VD's JCL standards, and job and output classes may affect them, this may be a problem.

Status: Investigation has not been started yet.

JCL

During 1992, VD has intention to start an investigation to look over JCL standards completely, including JCL generators, to get common standards and tools that should cover new technique and all different needs from different organisations.

Due to the scope of the investigation mentioned above, all 3 data centers will be affected by the investigation itself, but possible changes in production JCL will probably be carried out during 1993.

Status: To be started during 1992.

Automation Progress

At VD, automation progress has been carried on through different projects during a couple of years. Since April 90, department Automation coordinates all automation for the operation of mainframes, including the network. But still, mostly all automation work is done in project form where also a lot of automation decisions are taken.

With 3 data centers, all decision making will be much more difficult, and to keep all involved persons and organisations fully informed, educated etc. in all different automation areas may be tough.

The ambition is to have one logic automation group, where all decisions are taken together, but how to realize this need further investigation.

Status: Under discussion.

Appendix B. Program products

Following program products are involved in GGG Operation and Automation. These products are a subset of the complete product list specified in **Common Platform - Program Products**. For versions, releases, maintenance levels, and order numbers refer to that document.

Mandatory Program Products:

AOC/MVS from IBM. Central tool for system automation.

Note: This product has not yet been installed in VD's production systems.

MIM/MIA from Legent Corp. Standard tool to coordinate usage of tapedrives between systems.

NetView from IBM. Strategic tool for system and network management issues and systems management disciplines/procedures in general.

Omegamon/MVS from Candle. The central diagnostic tool for managing workload, performance, and to do exception anlysis in MVS systems. Central tool also for various tuning tasks.

Note: This product will later be replaced by **Omegamon II for MVS**.

OPC/A from IBM. The central tool for planning and control of batch workload. OPC/A consists of several components that are needed depending on data center characteristics:

- OPC/A CTL
- OPC/A EMS
- OPC/A NEC

SDSF from IBM. The central tool to display SYSLOG data, job data, and to monitor task(s) such as execution of job(s) or printer activities.

VPS from Levi, Ray & Shoup, Inc. The central tool for remote printing in an SNA network

Optional Program Products:

CA Look from CA, Inc. Similar diagnostic tool as Omegamon/MVS with additional functions for i.e. Datacomm/IDEAL.

Ditto from IBM. General tool for operation matters such as reading tape labels, copying tapes etc.

DEXAN from Candle. Diagnostic tool for impact analysis of workload contention. Omegamon/MVS is prerequisite for this product.

Note: This product is integrated into **Omegamon II for MVS**.

Epilog from Candle. Diagnostic tool to analys workload, constraints, and performance of MVS systems based on historic (RMF) data.

Note: This product is integrated into **Omegamon II for MVS**.

Express Delivery from Goal Systems, Inc. Tool to package output into predefined groups before printing to optimize printing and delivery.

Info Management from IBM. The tool consists of components for Problem, Change, and Configuration Management and assists in systems management activities such as planning, monitoring, tracking, maintaining, coordinating, and reporting of problems and changes with consistent methods.

Info System from IBM. The base tool for the Info family of products and is a prerequisite for i.e. Info Management. For the Info family, Info System is responsible for the physical collecting, searching, retrieving, and storing data.

JCLSPLIT from IBM. Tool to retrieve sysout from DASD. JCLSPLIT works in conjunction with SAR.

Note: Previous collector for JCLSPLIT, VPW, has been replaced by SAR.

JMR/SMR from Legent Corp. Similar tools as SDSF. JMR handles Joblog management and retrieval (entire or part of job).

LAN Manager from IBM. Tool to monitor LAN networks. Monitoring may be done from this OS/2 based product or from NetView through the NetView-LAN Manager interface.

Note: LAN Manager will later be replaced by LAN Network Manager.

NPM from IBM. Central tool for monitoring SNA network activities. Collects network, session, and RTM data. If only collecting network data from NCP(s), one central NPM is preferred. Collecting session data requires NPM in all systems where monitored subsystems are running.

PMO from Legent Corp. Provides a "dynamic BLDL list" with TTR pointers to the most common used programs or clist modules according to a top-ten list that is continously updated. PMOXSYS allowes PMO in one system to communicate with another PMO in same MAS complex.

Quick Fetch from Legent Corp. Tool to store the most common used program modules to avoid I/O to load libraries.

RMDS from IBM. Tool to store, protect, view, and print selected pages of system output.

SAR from Goal Systems, inc. The product store sysouts on DASD with archive and retrieve functions for users. This product works in conjunction with JCLSPLIT.

TSCF from IBM. Tool to monitor one or more MVS target systems from a focal point. Provides automation facilities and also re-IPL capabilites from a focal point.

Program products to be discontinued:

Automate/MVS from Legent Corp. Central tool for system automation.

Note: This product will be replaced by AOC/MVS from IBM.

IOF Tool to display SYSLOG data, job data, and to monitor task(s) such as execution of job(s) or printer activities.

Note: This product will be replaced by SDSF from IBM.

JES328X from IBM. Similar tool as VPS.

Note: This product will be replaced by VPS from Levi, Ray & shoup, Inc.

OPS/MVS from Goal Systems, Inc. Central tool for system automation.

Note: This product will be replaced by AOC/MVS from IBM.

OPS/OCF from Goal Systems, Inc. Tool to monitor one or more MVS target systems from a focal point. Provides automation facilities and also re-IPL capabilites from a focal point.

Note: This product will be replaced by TSCF from IBM a/o Site Monitor or similar product.

Proper from IBM. Central tool for system automation.

Note: This product will be replaced by AOC/MVS from IBM.

SOF from IBM. This product provides automation through clist capabilities to simplify command strings. It also has a timer function to submit commands or JCL at certain times.

Note1: SOF has not been supported by IBM for approx. 10 years.

Note2: Old SOF functions should be implemented in NetView, AOC/MVS, or OPC/A.

Appendix C. User exits, modifications, and other user code packages

Following user exits and functions are used at Volvo Data and are delivered after modifications through Mexpack, or for NetView through the Automation Maintenance Facility (AMF):

OPC/A

User exits

DRKSUBUS Submit exit. Adds userid at submit.

DRKUX007 Status change exit. Sends abend information for jobs to Info Management and NetView (to NetView using the program-to-program interface of NetView).

NetView

User exits

DSIEX01 Message output exit. Intercepts input for later recall. Similar to command Retrieve.

DSIEX02A Input from operator exit. Base for VD's automation table that is using hashing searching algoritm.

DSIEX04 Log output exit. To define logging options, i.e. logging should not be done for a particular message id.

DSIEX11 Unsolicited VTAM messages exit. Copies all unsolicited VTAM messages to users that have requested these messages through command processor DPCUNSL.

DSIEX12 Logon exit. Allocates storage that are used by various command processors.

DSIEX14 Logoff exit. Frees storage obtained by DSIEX12.

Command processors

ÅHASPZZZ Rewrites certain JES2 messages. Prefixes JES2 messages in NetView with JOB/STC/TSU number.

ADATTIM Date/time command processor. From SYS1.CNMSAMP.

DISPLID VTAM display command processor. Replaces DISPLAY clists and should be driven by a PFK.

DPCUNSL Authorization of message receiving. Makes a NetView operator receiver of VTAM unsolicited messages. Function may dynamically be enabled/disabled.

DPRECOM Similar as NetView original command RETRIEVE. DPCRECOM will not retrieve the clist name, in front of the text, when retrieving text entered with a PFK, i.e. DISPLID.

EXITLOAD For load of VD's automation table (VAUTOMSG).

INITPPT Identical as DSIEX12 but for PPT (which is not driven for the PPT).

VACT VTAM activate command processor. Replaces clists such as ACT and should driven by a PFK.

VINACT VTAM inactivate command command processor. Replaces clists such as INACT and should be driven by a PFK.

VNVLOAD To suppress defined messages from logging regardless of logging options in the automation table.

VNVSHOW Online display of NetView storage contents, i.e. to display storage addresses to control blocks.

VNVMTAB Contains all messages that are generated from VD's automation table.

VTRAPLOG Is a modified ASEQLOG for sequential logging.

Other NetView user code

DSIRXUFP NetView REXX user function which provide a systems SID with function call VRXSID().

VNVRXVPS NetView REXX function to keep some characteristics of VPS printers in extended CSA.

NPDA code points

BNJ81UTB Recommended actions.

BNJ82UTB Detail data.

BNJ92UTB Alert descriptions.

BNJ93UTB Probable causes.

BNJ94UTB User causes.

BNJ95UTB Install causes.

BNJ96UTB Failure causes.

Other NetView modules (replacing IBM defaults)

DSICTMOD Customized for all NetView components except NLDM.

DSIZVLSR Customized for all NetView VSAM clusters.

User Packages

EXTAS Is a complete package of programs to handle external tapes, both for reading input tapes and creating output tapes. Input tapes are read in a standardized way and creates input files on DASD's prior to execution of current applications, i.e. on one or more input tapes could be read in serie separated from applications during office hours. For output tapes, data is placed on DASD until decision is taken to create the tapes, i.e. during daytime.

Automation Maintenance Facility (AMF) Is a complete package of ISPF and NetView clists and panels to simplify creating, distributing, and maintaining various operation and automation members in a standardized way. Purpose with AMF is to create or update various PDS members in one system and through panels distribute new or changed members (members may also be deleted from central system. AMF supports NetView clists, panels, Linklib and Parmlib members, NetView automation tables and MPF list. AMF is prepared to be used by all 3 data centers. When distributing NetView clists, all comment lines and blank lines are automatically deleted and pre-load is done if older versions were pre-loaded. For MPF lists, the SET MPF command is done automatically when the new version has been added to the target library.

The purpose is to use AMF in the 3 data centers locally with automated distributing of NetView clists and panels to a central repository at VD.