

Quality Initiative at ESO

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INTRODUCTION

ESO is running lots of processes: Operating various observatory sites (Paranal, La Silla, ALMA, APEX); developing instruments and telescopes; collecting, checking, archiving and distributing astronomical data; allocating observing time; administering an intercontinental organisation.

Investigating ways of improving quality led us to attempting a “robust process approach”, with industry style process specification, design and improvement.

Processes

Processes need

★ Specification ★ Design ★ Improvement ★

Process Specification

Determine for every process its

- Purpose
- Customer(s)
- Outcome
- Sponsor
- Stakeholders
- Flow
- Etc.
- Transformation
- Input
- Output
- Owner
- Responsibilities
- Needed assets

METHOD

Process Design

- | Process stages | Detailed process flow |
|----------------|------------------------|
| ➤ Responsible | ➤ Sequence |
| ➤ Tasks | ➤ Conditions/branching |
| ➤ Input | ➤ Metrics |
| ➤ Output | ➤ Controls |

Process Environment

Process Network

- Process inventory
 - Processes operating in ESO
 - Classification
 - Core processes (Procure instrument; perform scientific observations; ...)
 - Support processes (Purchasing, hiring, reviewing ...)
 - Procedures (Documenting, ...)
- Process interactions: Output(P1) = input(P2)

Well designed processes work goal-oriented.
They help overcome structural barriers by breaking down “organisational silos”.

IMPLEMENTATION

Plan

- ESO is setting up an implementation project team introducing the “robust process approach”. It will
- Set up process inventory incl. classification
 - Support owners in analysing their processes
 - Support owners in specification and design
 - Identify missing and duplicate processes
 - Conduct periodic process inspections

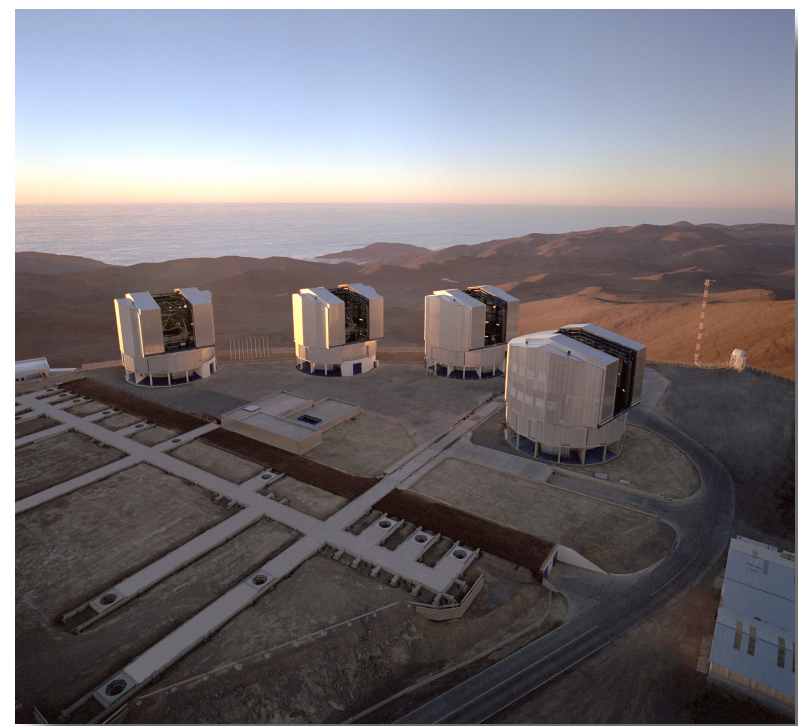
Resources, schedule

Estimated effort (work time) needed for 25 most important processes: approx. 2.5 man-months.
Estimated duration including setting up initial process inventory is 26-32 months depending on the actual time available by project team and process owners. 2-3 staff trained as process analysis specialists.

OUTLOOK

Expected outcome

- Processes better coordinated (output/input)
- Improved stages → shorter execution time
- More staff satisfaction
- More efficient use of resources



➤ Flow

➤ Needed assets

➤ Etc.

A

B

C

Process Specification Sheet

Process: create and release a document

Process owner: Head of PMD

Process outcome measures (list all):

a. doc released that can be used
b.
c.

Primary customer(s): PM of parent process
Secondary customer(s): future project teams

Process output: released pdf
Process outcome: make information available in a useful form

Secondary outcome: ??
Process sponsor: Programme Manager

Contributory accountability: doc owner, author, archive manager

Key elements/activities in the process logic:

trigger doc creation – collect content – write doc using correct template – doc review – quality check – doc validation – doc approval – doc release

Frequency: as required

Start: order for author to start

Finish: doc release notification

Process documentation/instructions:

Accountability \ Assets relevant to process
PDM admin
doc author
doc reviewer

Asset1

doc template(s)
subject knowledge
subject knowledge

Asset2

PDM workflow(s)

Asset3

working PDM

Definitions:

- Primary customer
- Secondary customer
- process output
- process outcome
- process owner
- process sponsor
- accountability
- asset

for whom the process is designed to deliver the main benefit (may be internal or external)
who receives a significant benefit from the process (may be internal or external)
the tangible result of the transformation of inputs (may be hardware, software, a doc etc)

the delivery of the outputs in accordance with the defined requirements
the person who is executing the process (is appointed by the process sponsor)

the person or function ultimately accountable for the process outcome ("the one who pays"; may be an individual or a board)
the person responsible for this asset

assets relevant to the process ("what is needed to run the process"; may be materials, contracts, staff competencies etc.)

Templates modelled af

Process Definition Sheet (core process)			
Stage	Who (respons.)	Result(s)	Requirement(s)
1 Trigger doc creation	doc owner	doc entry in PDM	role definition (PMP)
2 Prepare document	author1	"draft" doc in PDM	DRD correct template
3 Review document	doc owner	"prepared" doc in PDM	
comment			
same for update, except creation of doc entry			
Support processes:			
none			
Explanation:			
a process moves through stages			
the person or function that is responsible for the activities of the stage			
what is being done in the stage			
the result(s) of the activities in the stage			
what is needed to perform the activities in the stage (resources, docs, information, permits...)			

Templates modelled after examples by thecqi.org