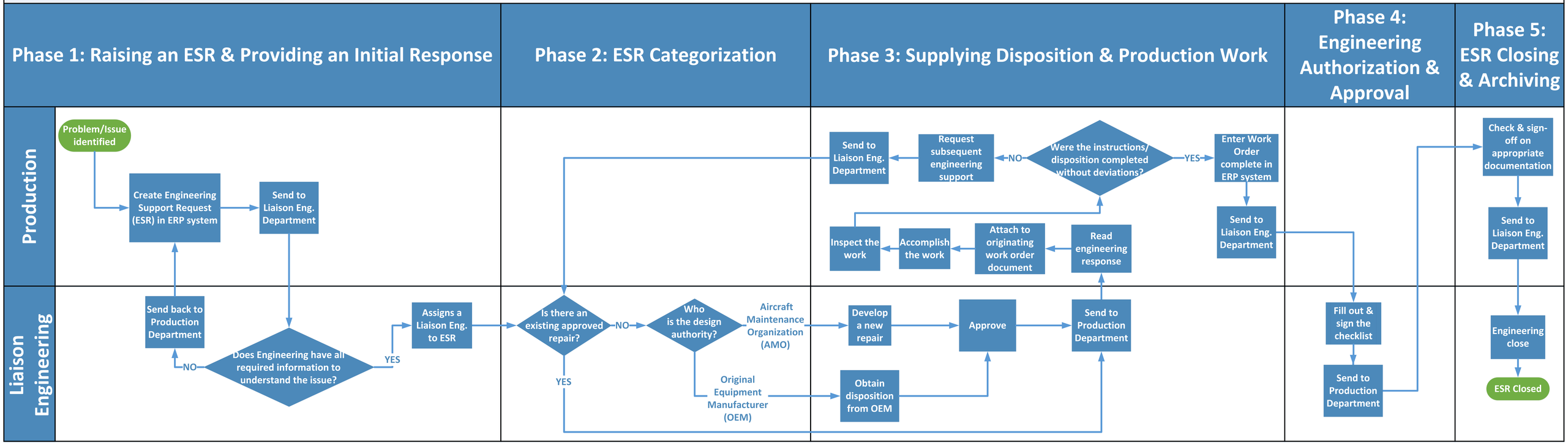
Process Map Level 1



Process Map Level 2

Phase 1: Raising an ESR & Providing an Initial Response

Production

- Problem/Issue identified
- Create Engineering Support Request (ESR) in ERP system
- Digital Engineering Support Request (ESR) in ERP system
- Enter information about problem/issue into ERP system
- Digital information about problem/ issue in ERP system
- Send to Liaison Eng. Department

Liaison Engineering

- Does Engineering have all required information to understand the issue?
- NO → Send to Production Department
- YES → Assigns a Liaison Eng. to ESR in ERP system
- Digital Engineering Support Request (ESR) in ERP system
- Export the digital ESR as a PDF form from the ERP system
- PDF of Engineering Support Request Form (ESRF)
- Save ESRF_IDR.PDF into local Liaison Engineering folder
- Manually transcribe the information from ESRF into internal engineering database
- Internal engineering database

Phase 2: ESR Categorization

- Does the assigned Liaison Engineer have all required information to understand the issue?
- YES → Is there an existing approved repair?
- NO → Is it possible to informally obtain the information
- YES → Obtain information by going to see the issue on the shop floor
- NO → Write & send a request for more information
- Gather & send requested information
- YES → Who is the design authority?
- Aircraft Maintenance Organization (AMO)
- Original Equipment Manufacturer (OEM)

Phase 3: Supplying Disposition & Production Work

Production

- Send to Liaison Eng. Department
- Add Production comments in ERP system regarding discrepancies/deviations
- Production comments as digital information in ERP system
- Request subsequent engineering support in ERP System
- Were the instructions/ disposition completed without deviations?
- NO → Request subsequent engineering support in ERP System
- YES → Enter Work Order complete in ERP system
- Send to Liaison Eng. Department
- Manually sign-off on completed steps
- Printed ESRF
- Printed NRIF
- Scan the printed ESRF or NRIF
- Signed completed steps as PDF of ESRF or NRIF
- Upload scanned PDF document into ERP system
- Signed completed steps as Digital ESRF or NRIF in ERP system
- Printed ESRF
- Printed NRIF
- Digital NRIF or ESRF in the ERP system
- Read engineering response in NRIF or ESRF
- Print PDF of NRIF or ESRF from ERP system
- Attach to originating work order document
- Work Order document
- Accomplish the work
- Inspect the work

Liaison Engineering

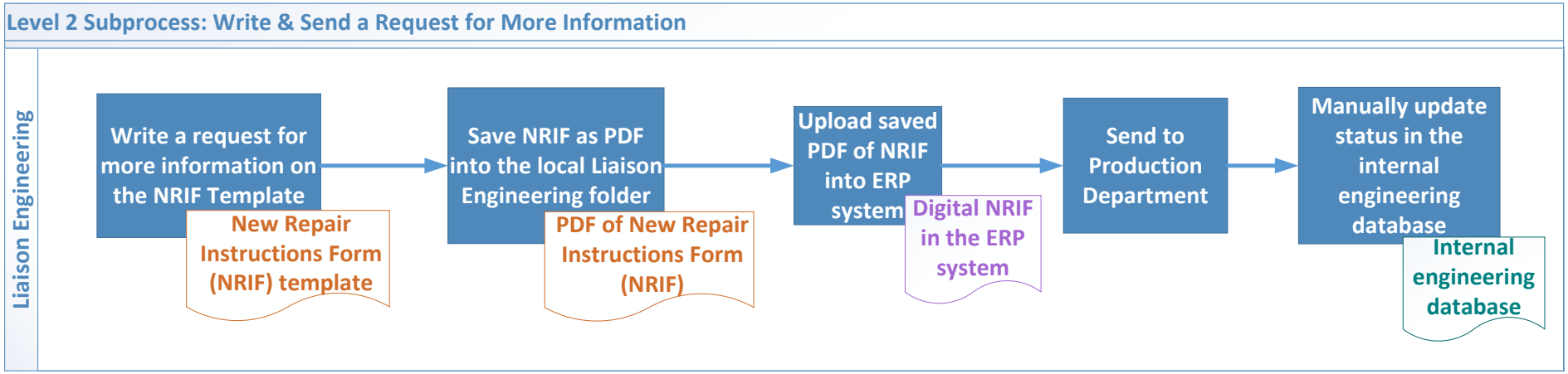
- Who is the design authority?
- Original Equipment Manufacturer (OEM) → Contact OEM requesting disposition to ESR
- Receive disposition to ESR
- PDF of Disposition from OEM
- Annotate PDF of ESRF with disposition
- PDF of Engineering Support Request Form (ESRF)
- Upload saved PDF of ESRF back into ERP system
- Digital ESRF in the ERP system
- Approve ESRF/NRIF
- Aircraft Maintenance Organization (AMO) → Develop a new repair
- Write repair on a NRIF template
- New Repair Instructions Form (NRIF) template
- Save NRIF as a PDF into the local Liaison Engineering folder
- PDF of New Repair Instructions Form (NRIF)
- Upload saved PDF of NRIF into ERP system
- Digital NRIF in the ERP system
- Manually update status in the internal engineering database
- Internal engineering database
- Send to Production Department

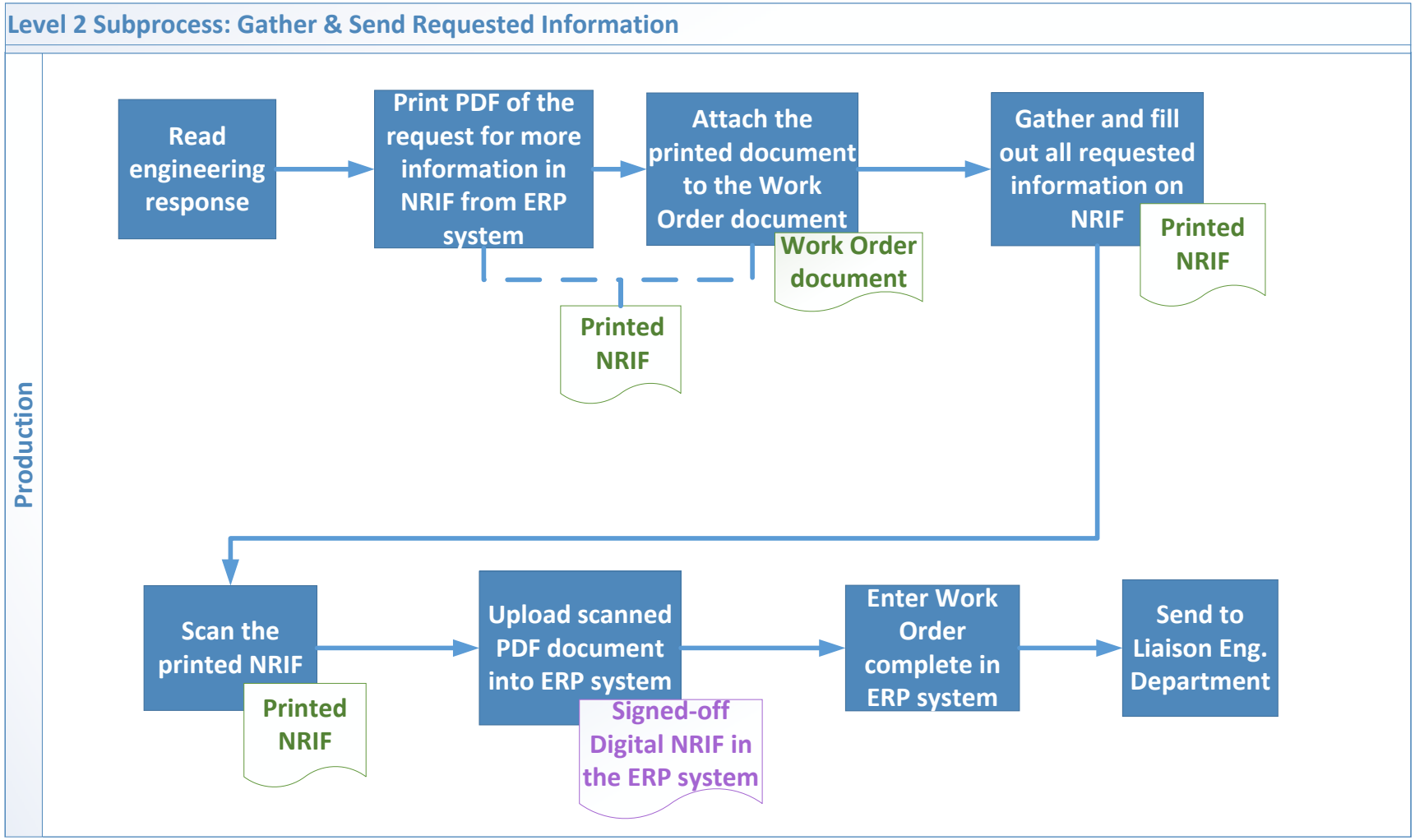
Phase 4: Engineering Authorization & Approval

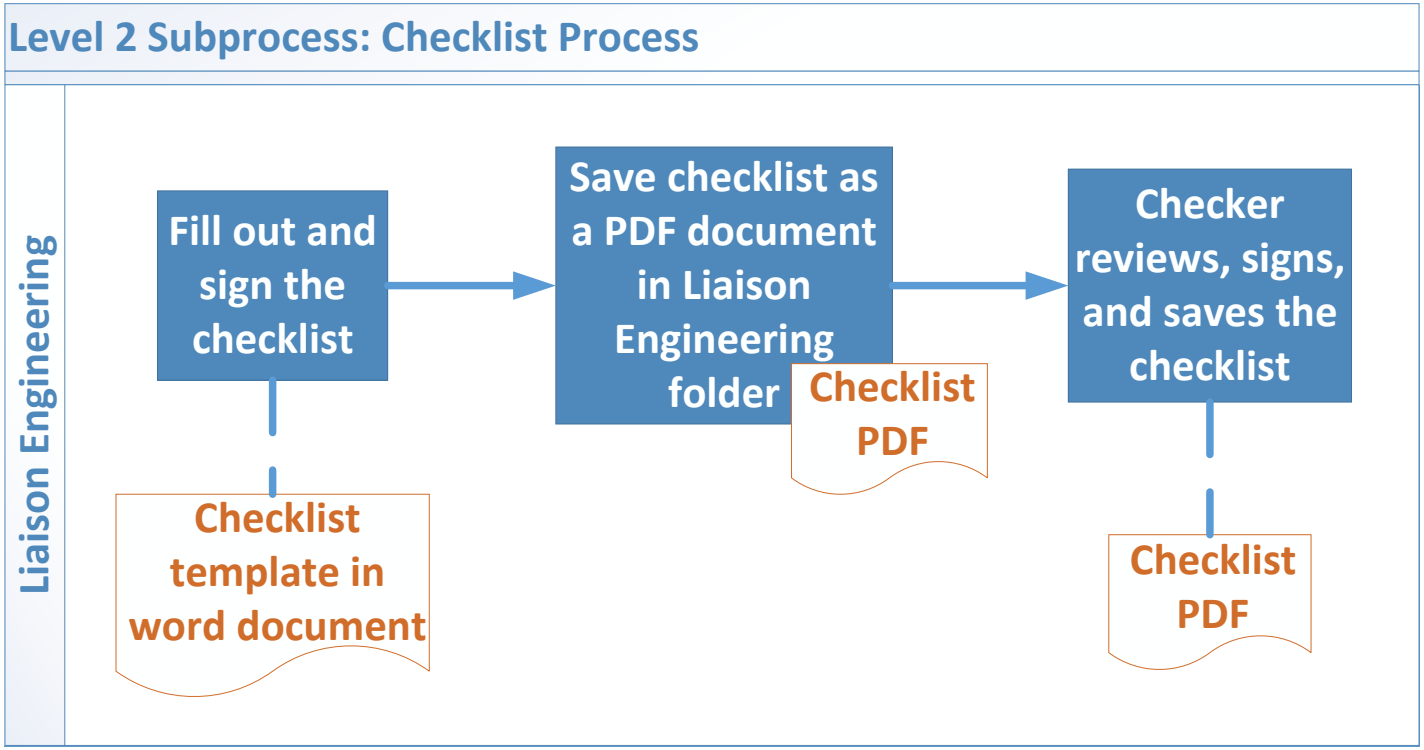
- Was the engineering response in a ESRF or an NRIF?
- NRIF → Create NRIF closing document
- PDF of New Repair Instructions Form (NRIF) closing document
- Save closing document as a PDF in the local Liaison Engineering folder
- Was the repair classified as major or minor?
- MAJOR → Engineering sign-off on NRIF closing document (& MRF if MINOR)
- MINOR → Prepare the Minor Repair Form (MRF)
- PDF of Minor Repair Form (MRF)
- Engineering sign-off on NRIF closing document (& MRF if MINOR)
- PDF of New Repair Instructions Form (NRIF) closing document
- Save signed-off PDF of NRIF closing document (& MRF if MINOR) into the local Liaison Engineering folder
- Digital NRIF closing document in ERP system
- Upload signed NRIF closing document (& MRF if MINOR) to ERP system
- ESRF → Engineering sign-off on ESRF
- PDF of Engineering Support Request Form (ESRF)
- Save signed-off PDF of ESRF into the local Liaison Engineering folder
- PDF of Engineering Support Request Form (ESRF)
- Upload signed ESRF document to ERP system
- Digital ESRF in ERP system
- Checklist Process
- Manually update status in the internal engineering database
- Internal engineering database
- Send to Production Department

Phase 5: ESR Closing & Archiving

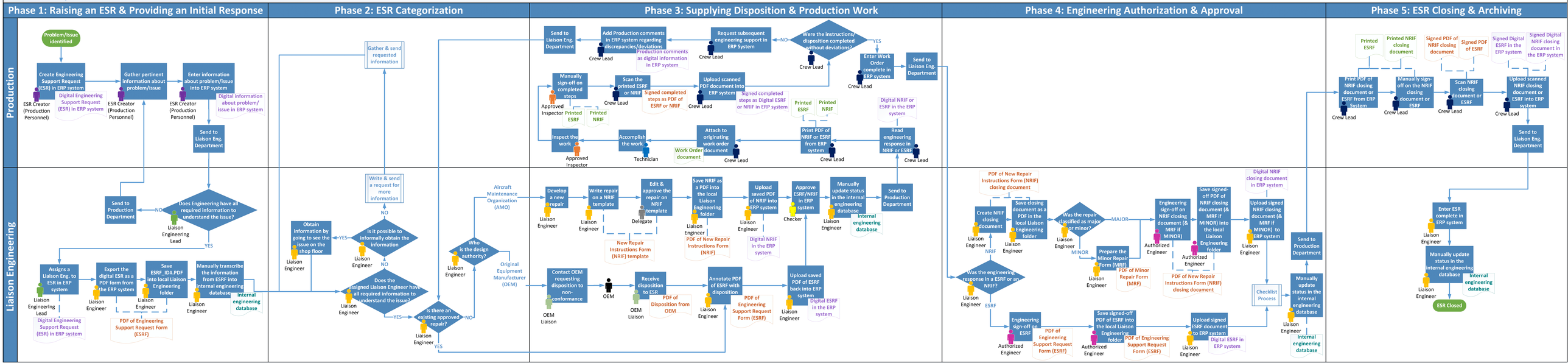
- Printed ESRF
- Printed NRIF closing document
- Signed PDF of NRIF closing document
- Signed PDF of ESRF
- Signed Digital ESRF in the ERP system
- Signed Digital NRIF closing document in the ERP system
- Print PDF of NRIF closing document or ESRF from ERP System
- Manually sign-off on the NRIF closing document or ESRF
- Scan NRIF closing document or ESRF
- Upload scanned NRIF closing document or ESRF into ERP system
- Send to Liaison Eng. Department
- Enter ESR complete in ERP system
- Manually update status in the internal engineering database
- Internal engineering database
- ESR Closed

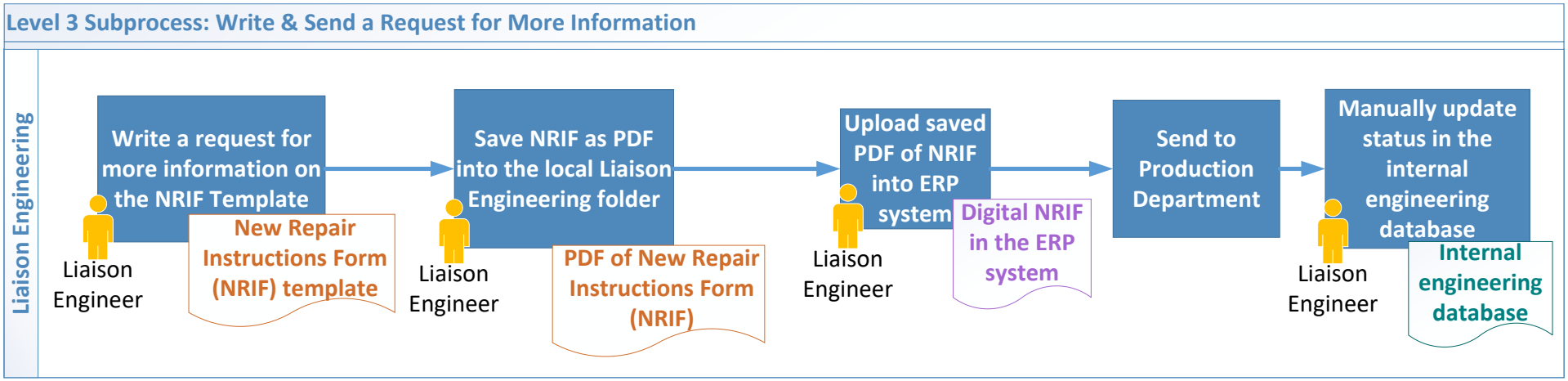

Level 2 Subprocess: Write & Send a Request for More Information
Liaison Engineering
Write a request for more information on the NRIF Template
New Repair Instructions Form (NRIF) template
Save NRIF as PDF into the local Liaison Engineering folder
PDF of New Repair Instructions Form (NRIF)
Upload saved PDF of NRIF into ERP system
Digital NRIF in the ERP system
Send to Production Department
Manually update status in the internal engineering database
Internal engineering database

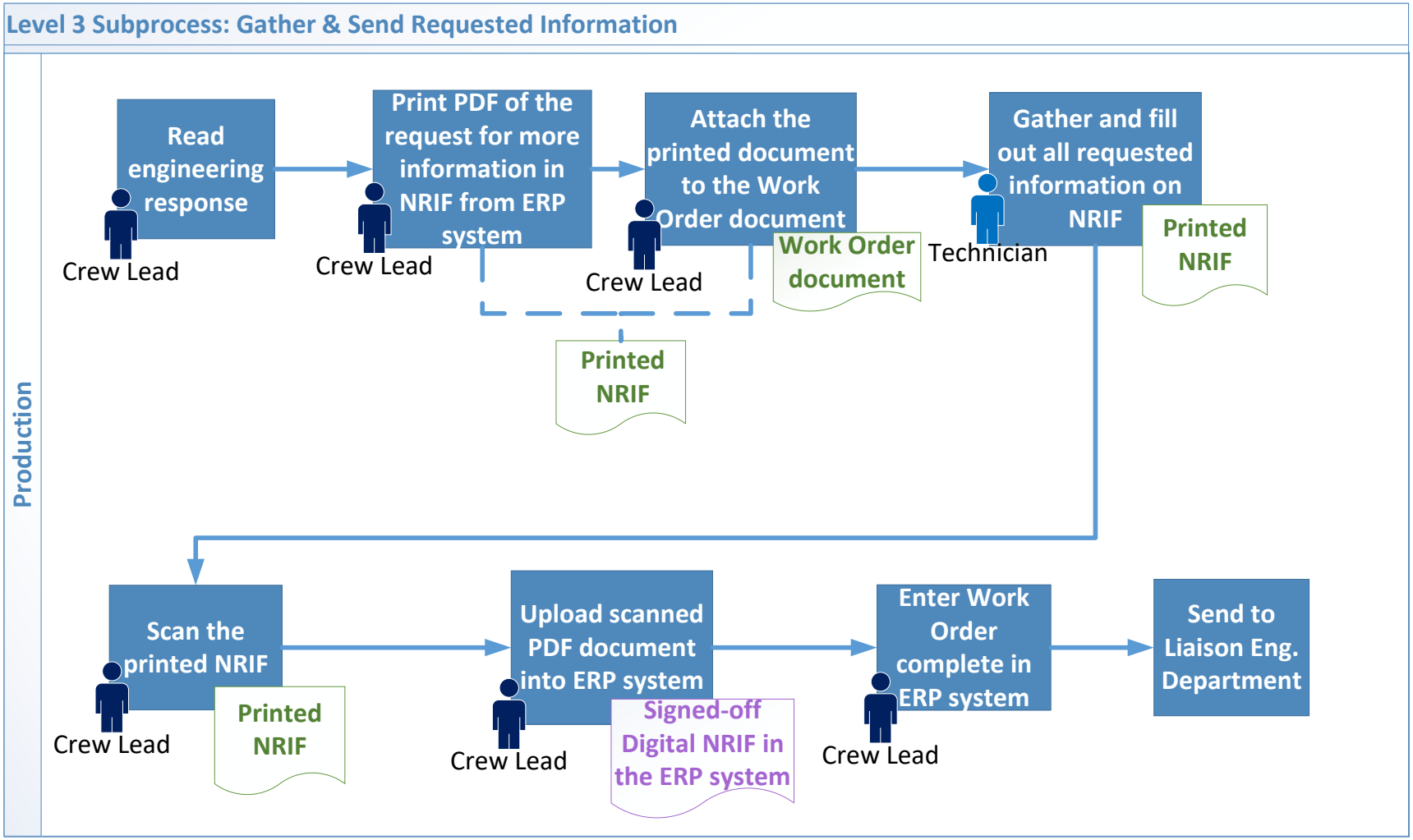

Level 2 Subprocess: Gather & Send Requested Information
Production
Read engineering response
Print PDF of the request for more information in NRIF from ERP system
Attach the printed document to the Work Order document
Gather and fill out all requested information on NRIF
Printed NRIF
Work Order document
Printed NRIF
Scan the printed NRIF
Printed NRIF
Upload scanned PDF document into ERP system
Signed-off Digital NRIF in the ERP system
Enter Work Order complete in ERP system
Send to Liaison Eng. Department

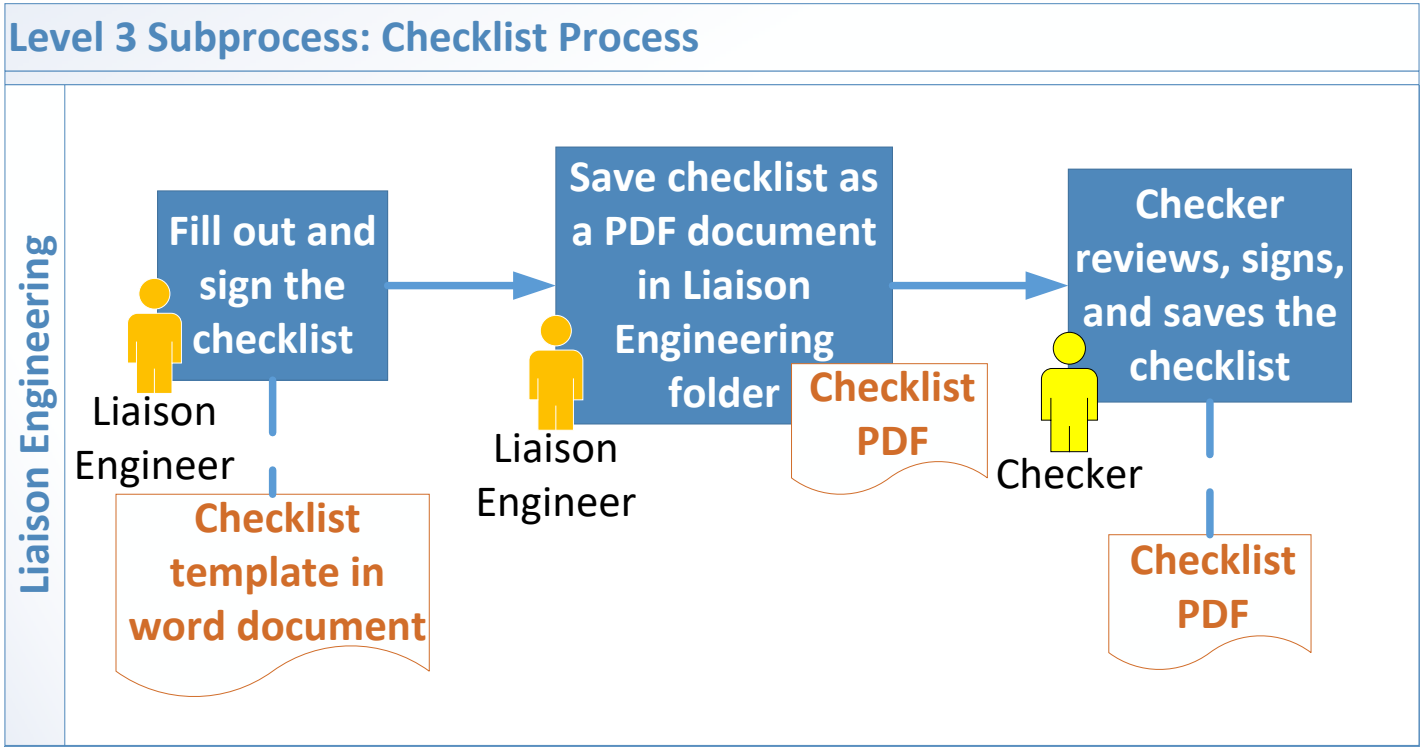

Level 2 Subprocess: Checklist Process
Liaison Engineering
Fill out and sign the checklist
Save checklist as a PDF document in Liaison Engineering folder
Checker reviews, signs, and saves the checklist
Checklist template in word document
Checklist PDF
Checklist PDF

Process Map Level 3




Level 3 Subprocess: Write & Send a Request for More Information
Liaison Engineering
Write a request for more information on the NRIF Template
Liaison Engineer
New Repair Instructions Form (NRIF) template
Save NRIF as PDF into the local Liaison Engineering folder
Liaison Engineer
PDF of New Repair Instructions Form (NRIF)
Upload saved PDF of NRIF into ERP system
Liaison Engineer
Digital NRIF in the ERP system
Send to Production Department
Manually update status in the internal engineering database
Liaison Engineer
Internal engineering database


Level 3 Subprocess: Gather & Send Requested Information
Production
Read engineering response
Crew Lead
Print PDF of the request for more information in NRIF from ERP system
Crew Lead
Attach the printed document to the Work Order document
Crew Lead
Work Order document
Gather and fill out all requested information on NRIF
Technician
Printed NRIF
Printed NRIF
Scan the printed NRIF
Crew Lead
Printed NRIF
Upload scanned PDF document into ERP system
Crew Lead
Signed-off Digital NRIF in the ERP system
Enter Work Order complete in ERP system
Crew Lead
Send to Liaison Eng. Department


Level 3 Subprocess: Checklist Process
Liaison Engineering
Fill out and sign the checklist
Liaison Engineer
Checklist template in word document
Save checklist as a PDF document in Liaison Engineering folder
Liaison Engineer
Checklist PDF
Checker reviews, signs, and saves the checklist
Checker
Checklist PDF

Process Map Level 4

Phase 1: Raising an ESR & Providing an Initial Response

Production

Problem/issue identified

Create Engineering Support Request (ESR) in ERP system — ESR Creator (Production Personnel)
Digital Engineering Support Request (ESR) in ERP system

Gather pertinent information about problem/issue — ESR Creator (Production Personnel)

Enter information about problem/issue into ERP system — ESR Creator (Production Personnel)
Digital information about problem/issue in ERP system

ERP system automatically sends notification email to Liaison Engineering of new ESR creation

Liaison Engineering

Send issue back to Production in ERP system — Liaison Engineering Lead

Does Engineering have all required information to understand the issue? — NO / YES — Liaison Engineering Lead

Acknowledge email notification — Liaison Engineering Lead

Assigns a Liaison Eng. to ESR in ERP system — Liaison Engineering Lead
Digital Engineering Support Request (ESR) in ERP system

ERP system automatically sends notification email to assigned Liaison Engineer

Acknowledge email notification — Liaison Engineer

Export the digital ESR as a PDF form from the ERP system — Liaison Engineer
PDF of Engineering Support Request Form (ESRF)

Save ESRF_ID#.PDF into local Liaison Engineering folder — Liaison Engineer

Manually transcribe the information from ESRF into internal engineering database — Liaison Engineer
Internal engineering database

Phase 2: ESR Categorization

Production

Gather & send requested information

Acknowledge email notification — Crew Lead

Liaison Engineering

Acknowledge email notification — Liaison Engineer

Obtain information by going to see the issue on the shop floor — Liaison Engineer

Is it possible to informally obtain the information — YES / NO — Liaison Engineer

Write & send a request for more information

Does the assigned Liaison Engineer have all required information to understand the issue? — YES / NO — Liaison Engineer

Is there a existing approved repair? — YES / NO — Liaison Engineer

Who is the design authority? — Liaison Engineer
Aircraft Maintenance Organization (AMO)
Original Equipment Manufacturer (OEM)

Acknowledge email notification — Liaison Engineer

Phase 3: Supplying Disposition & Production Work

Production

ERP system automatically sends email notification that Production has requested subsequent engineering support to Liaison Engineering

Add Production comments in ERP system regarding discrepancies/deviations — Crew Lead
Production comments as digital information in ERP system

Request subsequent engineering support in ERP System — Crew Lead

Were the instructions/disposition completed without deviation? — NO / YES — Crew Lead

Enter Work Order complete in ERP system — Crew Lead
Digital NRIF or ESRF in the ERP system

ERP system automatically sends email notification that an ESRF/NRIF has been uploaded to Liaison Engineering

Manually sign-off on completed steps — Approved Inspector
Printed ESRF, Printed NRIF

Verbally notify Crew Lead that the inspection of the work was complete — Approved Inspector, Crew Lead

Scan the printed ESRF or NRIF — Crew Lead
Signed completed steps as PDF of ESRF or NRIF

Upload scanned PDF document into ERP system — Crew Lead
Signed completed steps as Digital ESRF or NRIF in ERP system

Inspect the work — Approved Inspector

Verbally notify Approved Inspector that work must be inspected — Approved Inspector, Technician

Accomplish the work — Technician

Verbally assign work order document to Technician — Technician, Crew Lead

Attach to originating work order document — Work Order document, Crew Lead

Print PDF of NRIF or ESRF from ERP system — Crew Lead
Printed ESRF, Printed NRIF

Read engineering response in NRIF or ESRF — Crew Lead

Acknowledge email notification — Crew Lead

Liaison Engineering

Develop a new repair — Liaison Engineer

Write repair on a NRIF template — Liaison Engineer

Send written repair to Delegate for consultation and approval via email — Liaison Engineer, Delegate
New Repair Instructions Form (NRIF) template

Acknowledge email notification — Delegate

Edit & approve the repair on NRIF template — Delegate
New Repair Instructions Form (NRIF) template

Send approved repair to Liaison Engineer via email — Delegate

Acknowledge email notification — Liaison Engineer

Save NRIF as a PDF into the local Liaison Engineering folder — Liaison Engineer
PDF of New Repair Instructions Form (NRIF)

Upload saved PDF of NRIF into ERP system — Liaison Engineer
Digital NRIF in the ERP system

Notify checker (via in-person, email, phone) that NRIF is ready to be checked — Checker

Acknowledge email notification — Checker

Approve ESRF/NRIF in ERP system — Checker

Manually update status in the internal engineering database — Liaison Engineer
Internal engineering database

ERP system automatically sends ESRF/NRIF to Production

Send ESR to OEM Relations Manager via email — Liaison Engineer
PDF of Engineering Support Request Form (ESRF)

Acknowledge email notification — OEM Liaison

Contact OEM via email requesting disposition to non-conformance — OEM Liaison

Receive & acknowledge disposition to ESR via email — OEM

Forward disposition to Liaison Engineer via email — OEM Liaison
PDF of Disposition from OEM

Acknowledge email notification — Liaison Engineer

Annotate PDF of ESRF with disposition — Liaison Engineer
PDF of Engineering Support Request Form (ESRF)

Upload saved PDF of ESRF back into ERP system — Liaison Engineer
Digital ESRF in the ERP system

Phase 4: Engineering Authorization & Approval

Liaison Engineering

Acknowledge email notification — Liaison Engineer

Was the repair classified as major or minor? — MAJOR / MINOR — Liaison Engineer

Was the engineering response in a ESRF or an NRIF? — NRIF / ESRF — Liaison Engineer

PDF of New Repair Instructions Form (NRIF) closing document

Create NRIF closing document — Liaison Engineer

Save closing document as a PDF in the local Liaison Engineering folder — Liaison Engineer

Send email to Authorized Engineer to verify & sign-off on ESRF — Liaison Engineer, Authorized Engineer

Acknowledge email notification — Authorized Engineer

Engineering sign-off on ESRF — Authorized Engineer
PDF of Engineering Support Request Form (ESRF)

Save signed-off PDF of ESRF into the local Liaison Engineering folder — Authorized Engineer

Send email to Authorized Engineer to verify & sign-off on PDF of NRIF closing document (& MRF if MINOR) — Authorized Engineer

Acknowledge email notification — Authorized Engineer

Engineering sign-off on NRIF closing document (& MRF if MINOR) — Authorized Engineer

Save signed-off PDF of NRIF closing document (& MRF if MINOR) into the local Liaison Engineering folder — Authorized Engineer

Send email to Liaison Engineer that ESRF (& MRF if MINOR) is complete — Authorized Engineer

Acknowledge email notification — Liaison Engineer

Prepare the Minor Repair Form (MRF) — Liaison Engineer
PDF of Minor Repair Form (MRF)

PDF of New Repair Instructions Form (NRIF) closing document

Send email to Liaison Engineer that ESRF is complete — Authorized Engineer

Acknowledge email notification — Liaison Engineer

Upload signed ESRF document to ERP system — Liaison Engineer
Digital ESRF in ERP system

Digital NRIF closing document in ERP system

Upload signed NRIF closing document (& MRF if MINOR) to ERP system — Liaison Engineer

Checklist Process

Manually update status in the internal engineering database — Liaison Engineer
Internal engineering database

ERP system automatically sends email notification that an NRIF closing document or ESRF has been uploaded to Production

Phase 5: ESR Closing & Archiving

Production

Printed ESRF — Crew Lead

Printed NRIF closing document — Crew Lead

Signed PDF of NRIF closing document — Crew Lead

Signed PDF of ESRF — Crew Lead

Signed Digital ESRF in the ERP system — Crew Lead

Signed Digital NRIF closing document in the ERP system — Crew Lead

Print PDF of NRIF closing document or ESRF from ERP system — Crew Lead

Manually sign-off on the NRIF closing document or ESRF — Crew Lead

Scan NRIF closing document or ESRF — Crew Lead

Upload scanned NRIF closing document or ESRF into ERP system — Crew Lead

ERP system automatically sends email notification that an NRIF closing document or ESRF has been uploaded to Liaison Engineering

Acknowledge email notification — Crew Lead

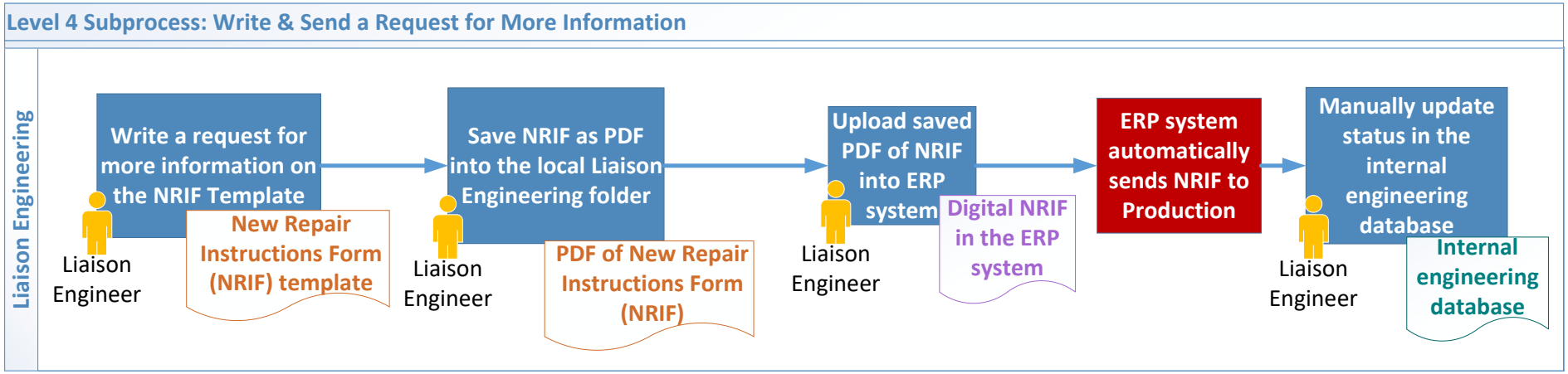
Liaison Engineering

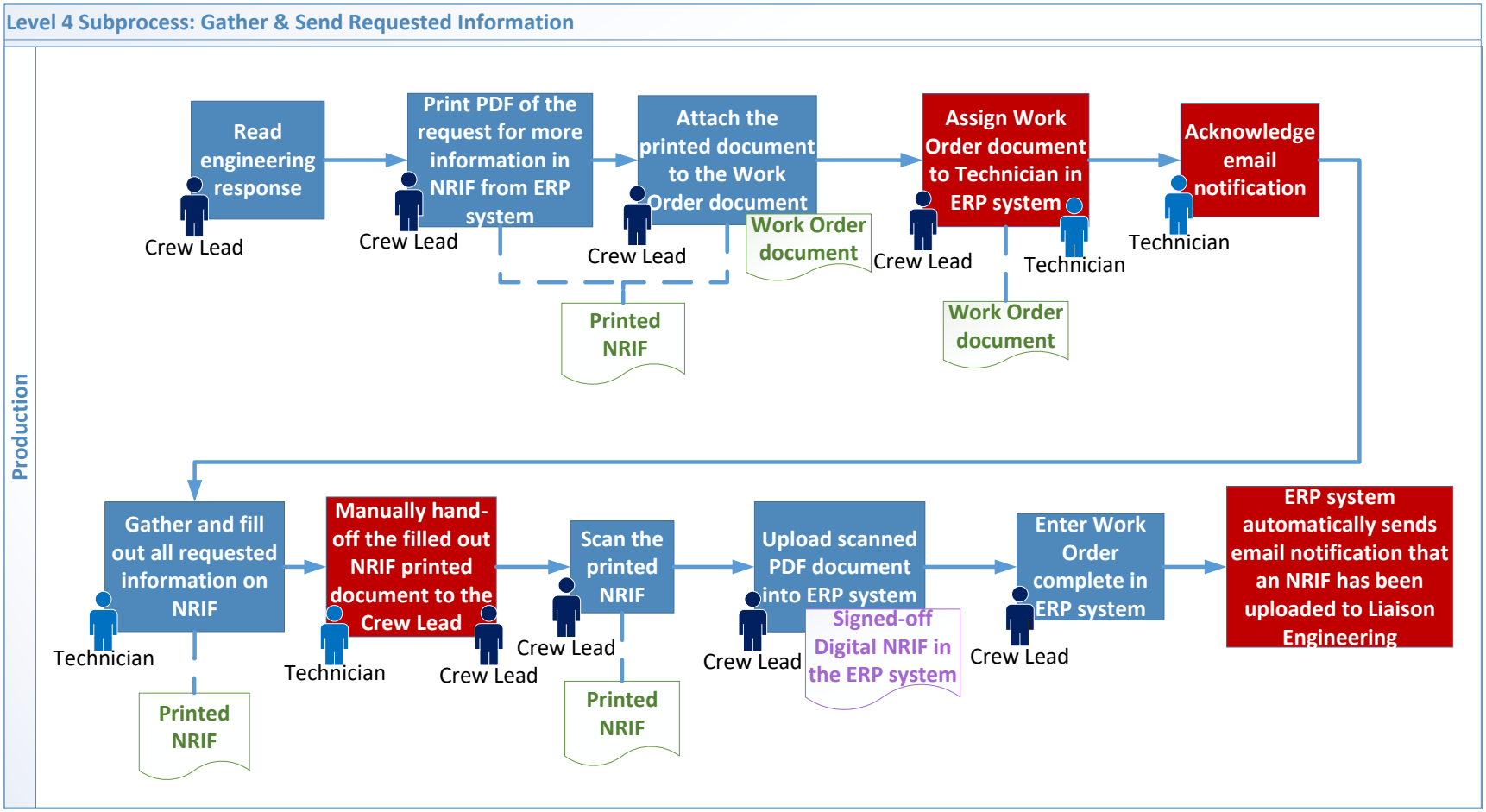
Acknowledge email notification — Liaison Engineer

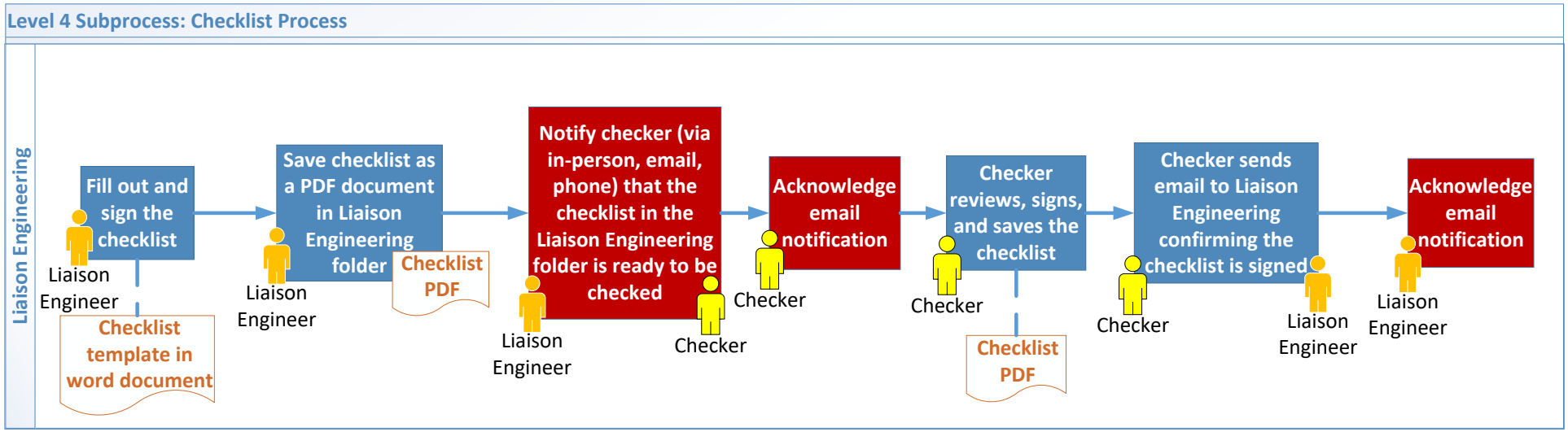
Enter ESR complete in ERP system — Liaison Engineer

Manually update status in the internal engineering database — Liaison Engineer
Internal engineering database

ESR Closed

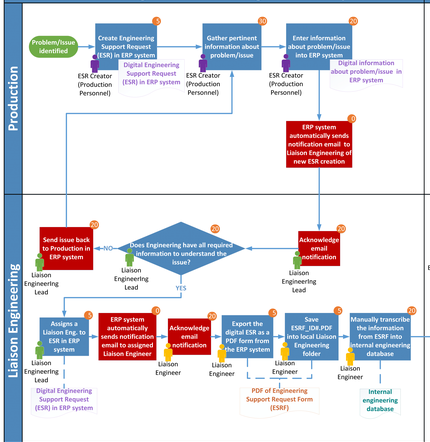

Level 4 Subprocess: Write & Send a Request for More Information
Liaison Engineering
Write a request for more information on the NRIF Template
Liaison Engineer
New Repair Instructions Form (NRIF) template
Save NRIF as PDF into the local Liaison Engineering folder
Liaison Engineer
PDF of New Repair Instructions Form (NRIF)
Upload saved PDF of NRIF into ERP system
Liaison Engineer
Digital NRIF in the ERP system
ERP system automatically sends NRIF to Production
Manually update status in the internal engineering database
Liaison Engineer
Internal engineering database


Level 4 Subprocess: Gather & Send Requested Information
Production
Read engineering response
Crew Lead
Print PDF of the request for more information in NRIF from ERP system
Crew Lead
Attach the printed document to the Work Order document
Crew Lead
Work Order document
Printed NRIF
Assign Work Order document to Technician in ERP system
Crew Lead
Technician
Work Order document
Acknowledge email notification
Technician
Gather and fill out all requested information on NRIF
Technician
Printed NRIF
Manually hand-off the filled out NRIF printed document to the Crew Lead
Technician
Crew Lead
Scan the printed NRIF
Crew Lead
Printed NRIF
Upload scanned PDF document into ERP system
Crew Lead
Signed-off Digital NRIF in the ERP system
Enter Work Order complete in ERP system
Crew Lead
ERP system automatically sends email notification that an NRIF has been uploaded to Liaison Engineering

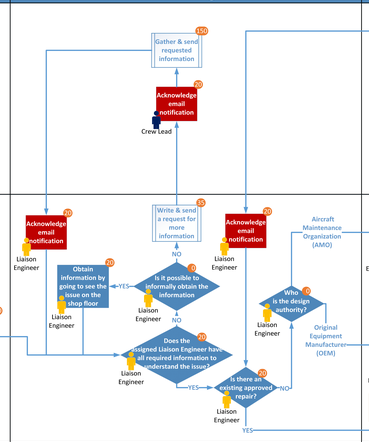

Level 4 Subprocess: Checklist Process
Liaison Engineering
Fill out and sign the checklist
Liaison Engineer
Checklist template in word document
Save checklist as a PDF document in Liaison Engineering folder
Liaison Engineer
Checklist PDF
Notify checker (via in-person, email, phone) that the checklist in the Liaison Engineering folder is ready to be checked
Liaison Engineer
Checker
Acknowledge email notification
Checker
Checker reviews, signs, and saves the checklist
Checker
Checklist PDF
Checker sends email to Liaison Engineering confirming the checklist is signed
Checker
Liaison Engineer
Acknowledge email notification
Liaison Engineer

Process Map Level 5

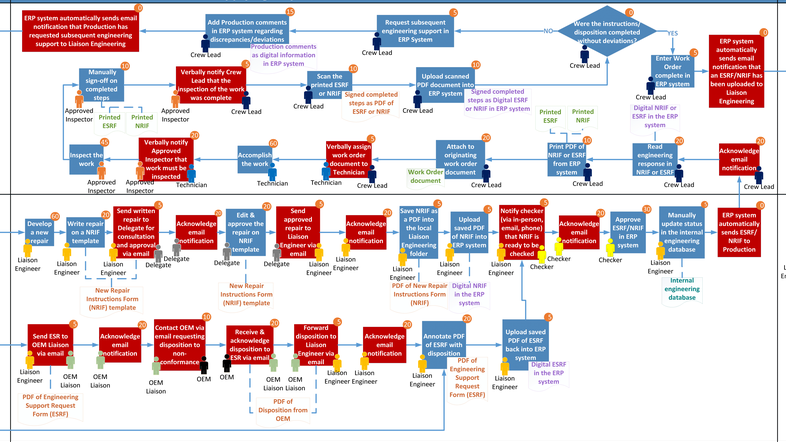
Phase 1: Raising an ESR & Providing an Initial Response



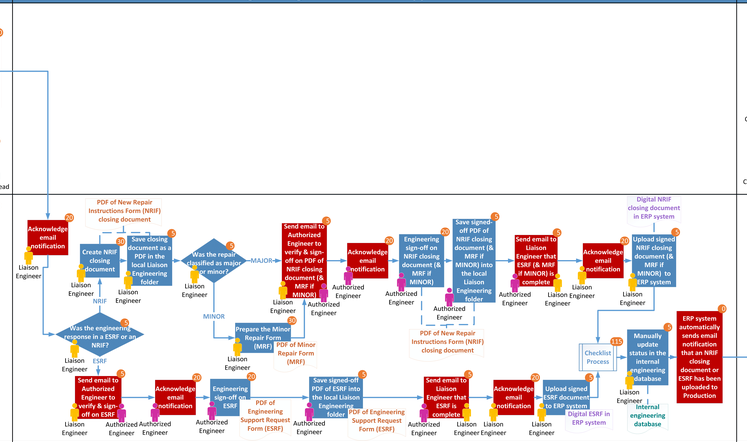
Phase 2: ESR Categorization



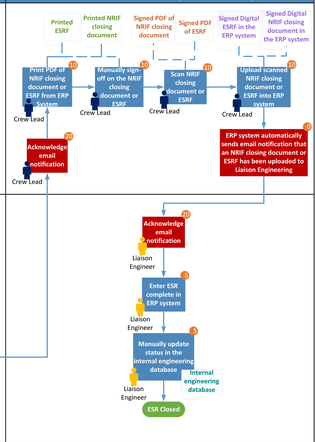
Phase 3: Supplying Disposition & Production Work

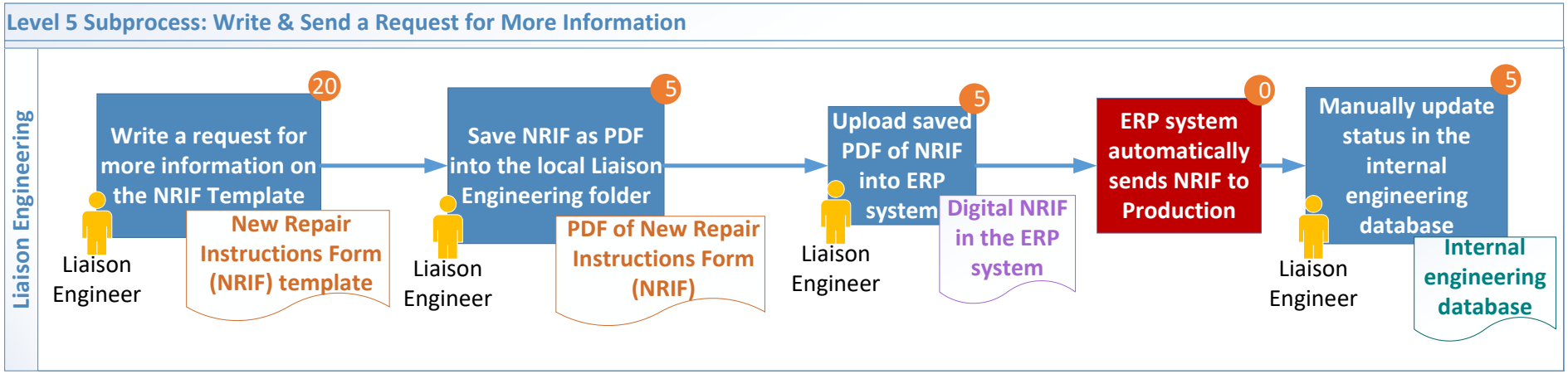


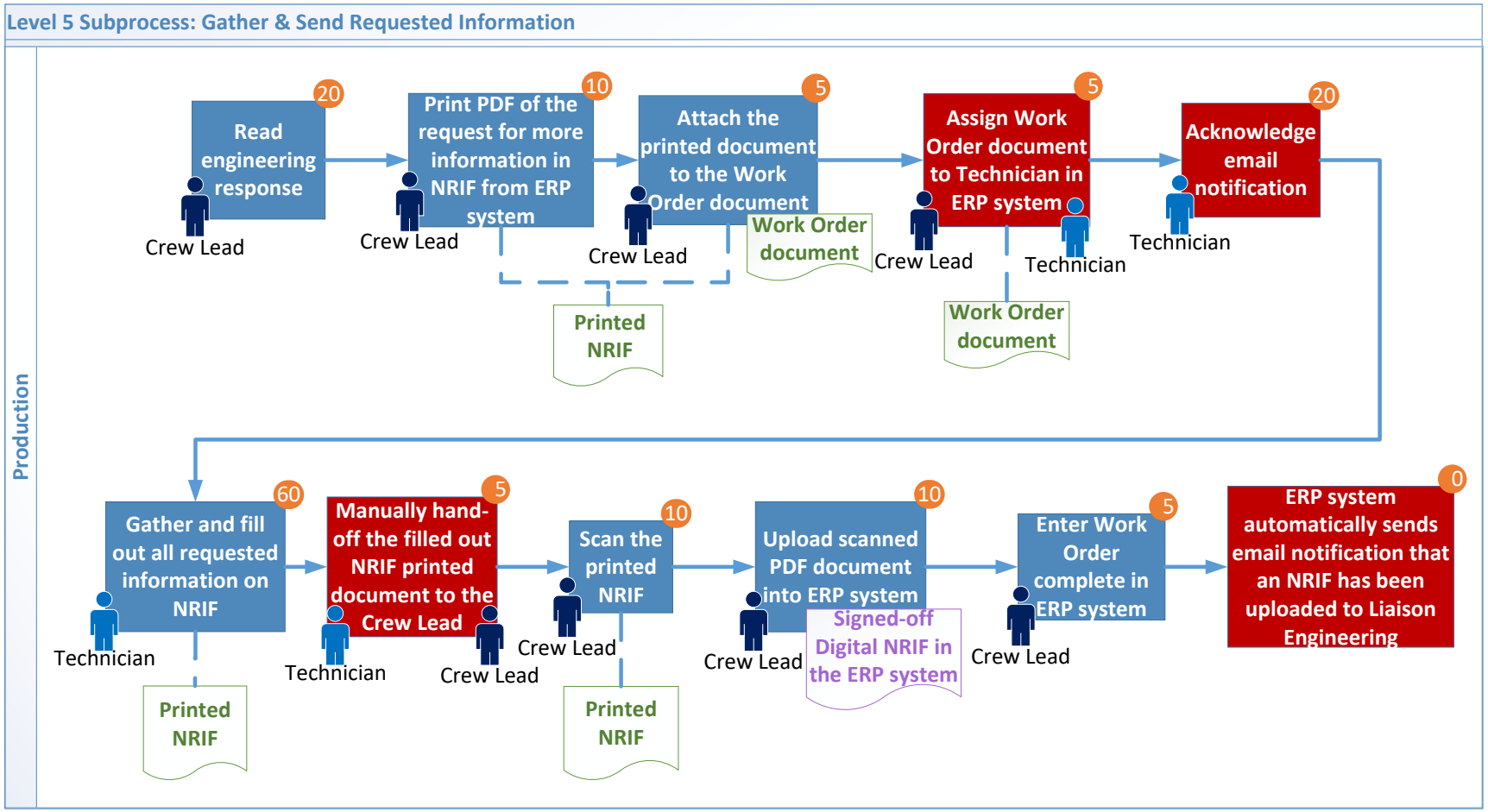
Phase 4: Engineering Authorization & Approval



Phase 5: ESR Closing & Archiving




Level 5 Subprocess: Write & Send a Request for More Information
Liaison Engineering
Write a request for more information on the NRIF Template
20
Liaison Engineer
New Repair Instructions Form (NRIF) template
Save NRIF as PDF into the local Liaison Engineering folder
5
Liaison Engineer
PDF of New Repair Instructions Form (NRIF)
Upload saved PDF of NRIF into ERP system
5
Liaison Engineer
Digital NRIF in the ERP system
ERP system automatically sends NRIF to Production
0
Manually update status in the internal engineering database
5
Liaison Engineer
Internal engineering database


Level 5 Subprocess: Gather & Send Requested Information
Production
Read engineering response
20
Crew Lead
Print PDF of the request for more information in NRIF from ERP system
10
Crew Lead
Attach the printed document to the Work Order document
5
Crew Lead
Work Order document
Printed NRIF
Assign Work Order document to Technician in ERP system
5
Crew Lead
Technician
Work Order document
Acknowledge email notification
20
Technician
Gather and fill out all requested information on NRIF
60
Technician
Printed NRIF
Manually hand-off the filled out NRIF printed document to the Crew Lead
5
Technician
Crew Lead
Scan the printed NRIF
10
Crew Lead
Printed NRIF
Upload scanned PDF document into ERP system
10
Crew Lead
Signed-off Digital NRIF in the ERP system
Enter Work Order complete in ERP system
5
Crew Lead
ERP system automatically sends email notification that an NRIF has been uploaded to Liaison Engineering
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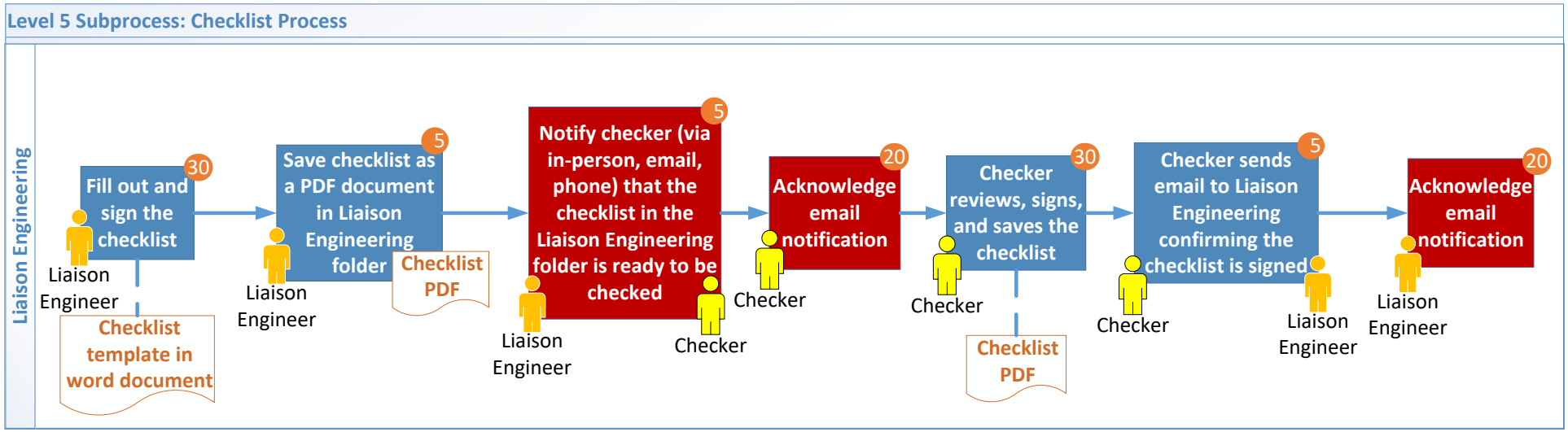
Level 5 Subprocess: Checklist Process
Liaison Engineering
Fill out and sign the checklist
30
Liaison Engineer
Checklist template in word document
Save checklist as a PDF document in Liaison Engineering folder
5
Liaison Engineer
Checklist PDF
Notify checker (via in-person, email, phone) that the checklist in the Liaison Engineering folder is ready to be checked
5
Liaison Engineer
Checker
Acknowledge email notification
20
Checker
Checker reviews, signs, and saves the checklist
30
Checker
Checklist PDF
Checker sends email to Liaison Engineering confirming the checklist is signed
5
Checker
Liaison Engineer
Acknowledge email notification
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Liaison Engineer