

EAS User Survey and resulting improvements

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A bit of history (1/2)

- ☞ The ESA Alert System was **launched in 1996**
- ☞ In September 1999 ESA organised the 1st workshop on Alerts:
 “Alerts and Lessons Learned: An effective way to prevent failures and problems”.
- ☞ The results have been published as report number WPP-167
- ☞ Attendance was from industry, CNES, NASA and NASDA.
- ☞ Summary of major Results and Recommendations:
 1. The **scope and content** of ESA Alerts and operation of the system **are appropriate**;
 2. The System contributes to the effectiveness and efficiency of the European **space industry**;
 3. ESA should **continue to operate** the ESA Alert System, **and expand** it to include all European space industry and customers
 4. **Interfaces with other alert systems**, especially in Europe, should be established;

A bit of history (2/2)

Some detailed RESULTS of the workshop were:

- ☛ The **distribution of Preliminary Alert Information (PAI) to users** is to be avoided. Although industry would be very interested in receiving the PAI before an Alert is finalized, all participants recognise the high risks of distributing not fully validated information;
- ☛ **Interface with other systems** should be : CNES, ASTRIUM, GIDEP, JAXA, etc...;
- ☛ **Submission of information on potential alerts by industry to ESA** to be reinforced;
- ☛ **Alert Coordinators list** should be available BUT with a **unique responsible per company**;
- ☛ **Alert status list** should be updated to make clear the alert status (ongoing, obsolete, withdrawn);
- ☛ **Liability** issue to be clarified (disclaimer);

2007 Review of the EAS

In 2007 a **major review** of the EAS was carried out, including:

- ☛ A **survey of all internal and external users**;
- ☛ A **set of interviews** to a selected group of ESA users and staff directly involved in the EAS process;
- ☛ An **internal audit** of the administrative aspects and records associated to the EAS process.

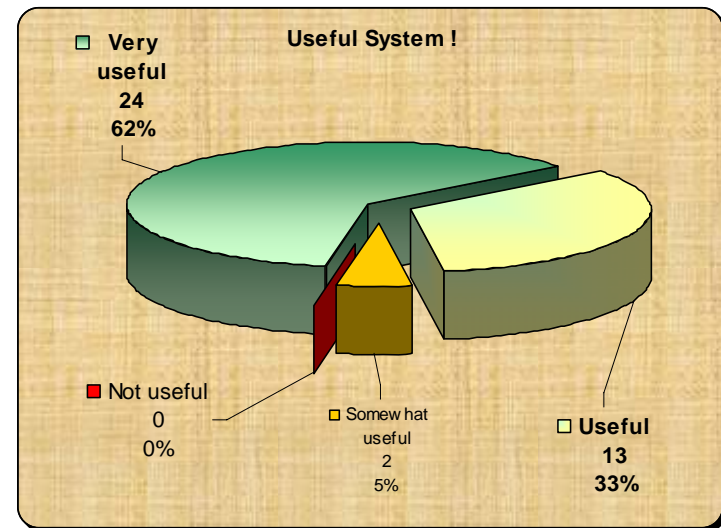
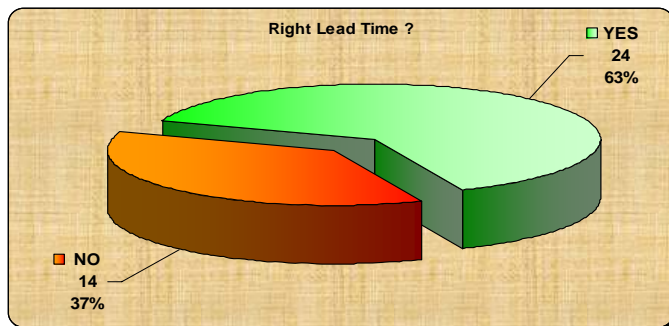
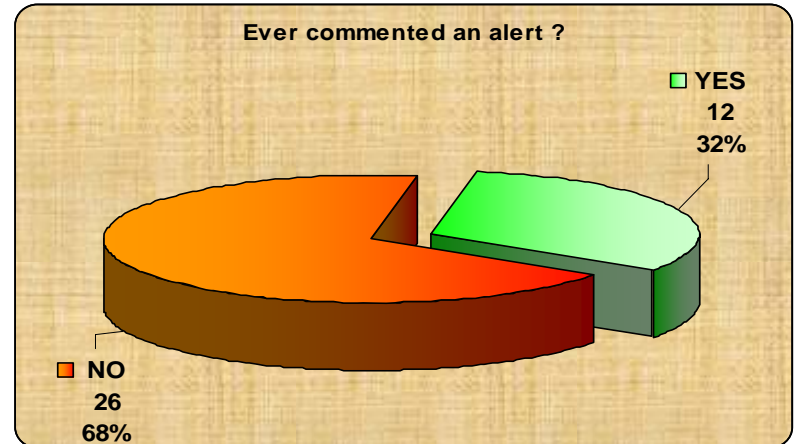
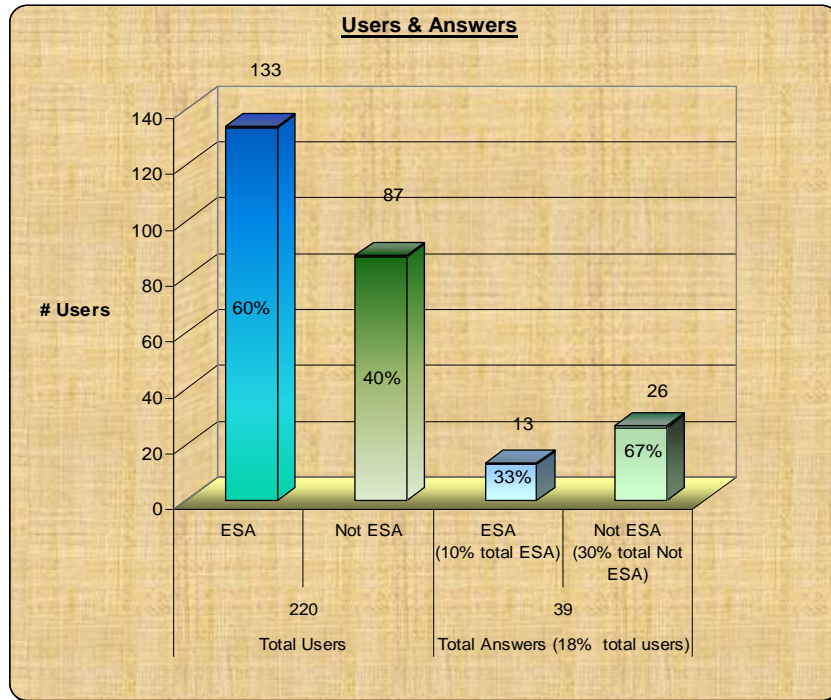
The review mainly addressed:

- ☛ **Feedback** from users;
- ☛ Internal **organisation** and implementation of **procedures**;
- ☛ System **Definition** and **Records**.

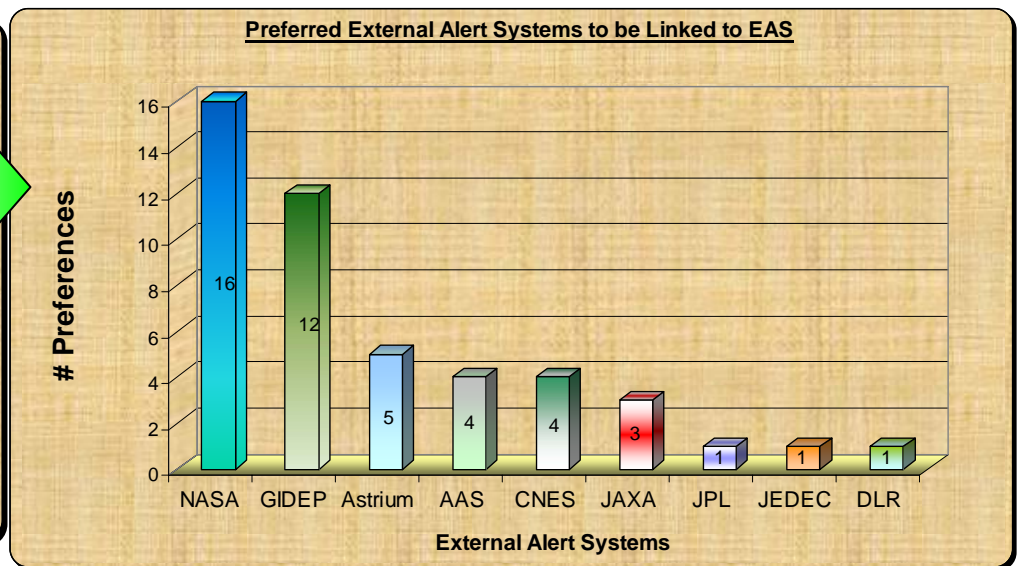
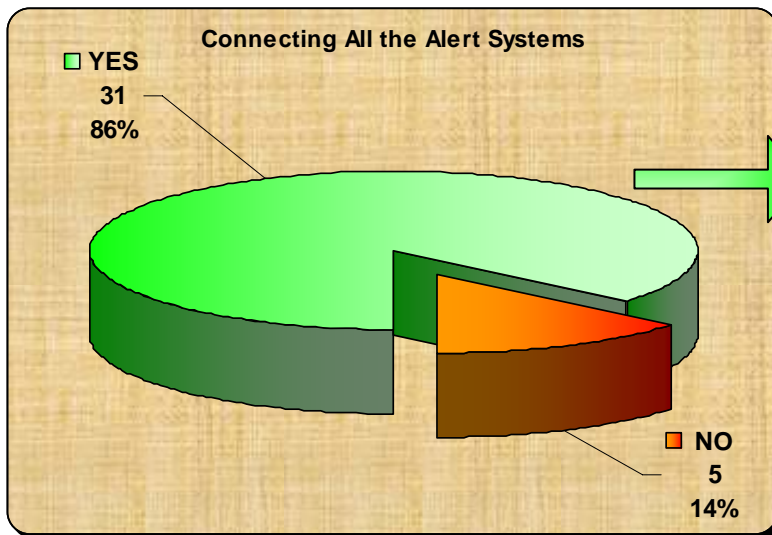
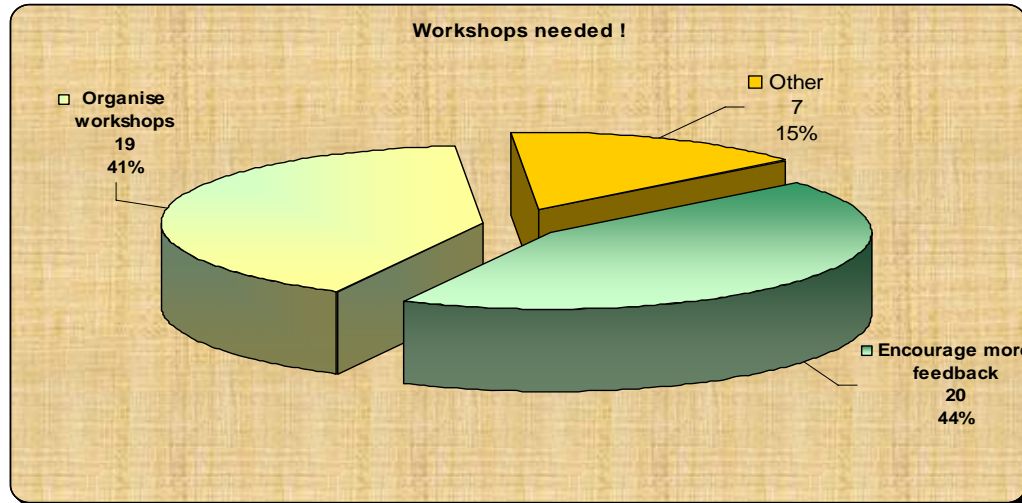
The EAS review **outcome** is documented in documents such as:

- ☛ Assessment Report (restricted distribution);
- ☛ Users Survey Report;
- ☛ Disposition of consolidated issues and proposed solutions;
- ☛ Summary of Intended Improvements – Draft 1, Aug 2007.

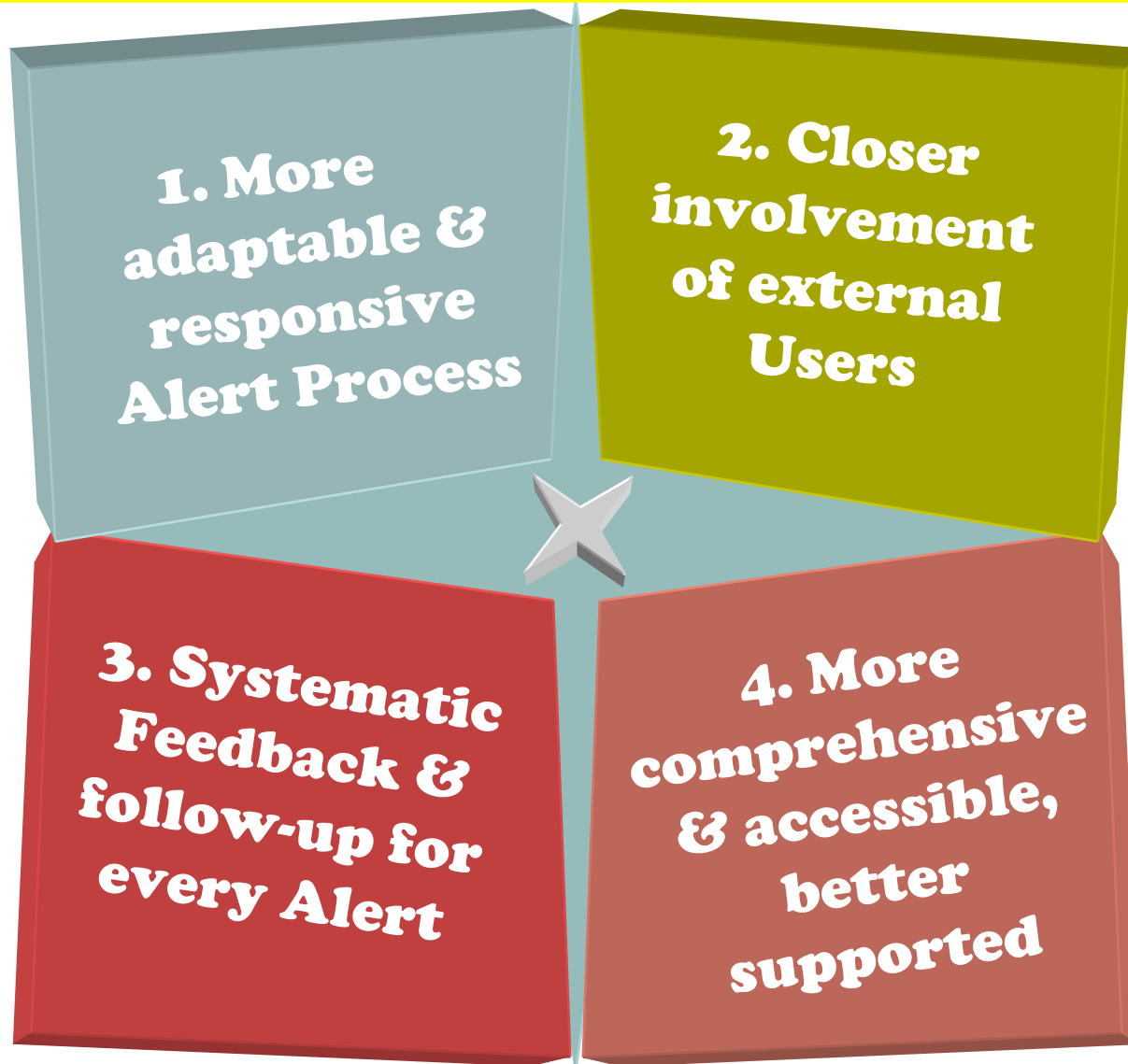
Survey Result 1/2

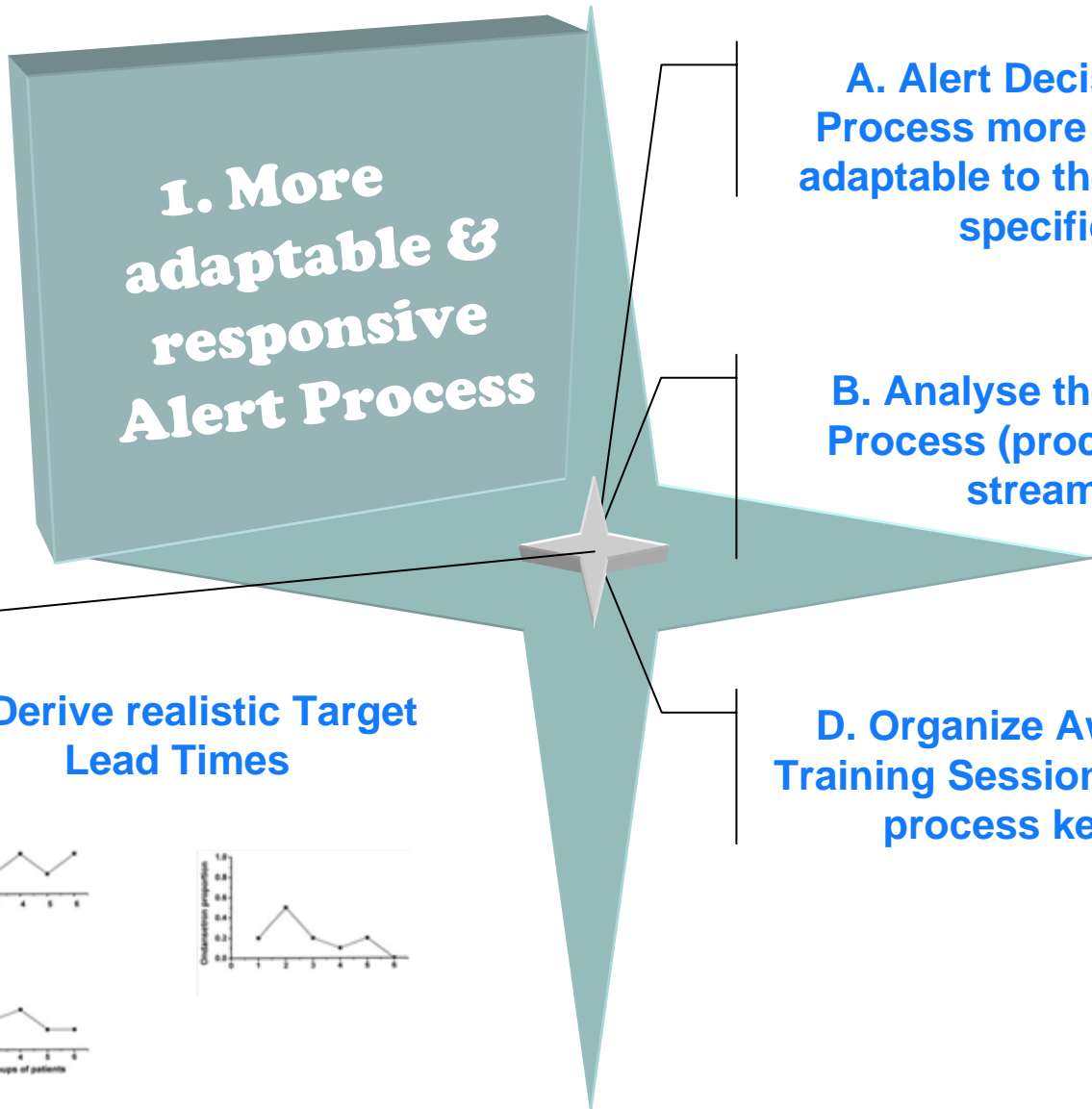


Survey Result 2/2



Main Improvement Areas





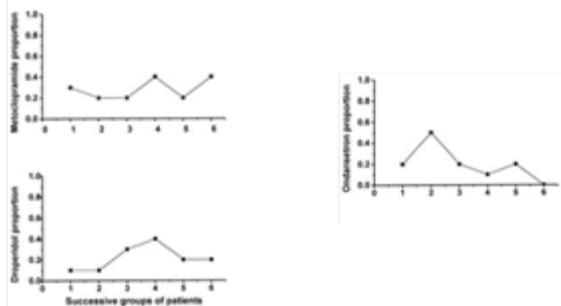
1. More adaptable & responsive Alert Process

A. Alert Decision Making Process more inclusive and adaptable to the nature of the specific case

B. Analyse the Target Alert Process (process FMEA) to streamline it.

Process	Step	Failure Mode	Severity	Occurrence	Detectability	RPN	Control
Alert Decision Making	1	Alert not triggered	High	Low	High	12	Review alert criteria
	2	Alert triggered but not acted on	Medium	Medium	Medium	12	Training on alert response
	3	Alert triggered but incorrect	High	Low	High	12	Review alert logic
	4	Alert triggered but delayed	Medium	Medium	Medium	12	Optimize alert latency
Alert Process	1	Alert not received	High	Low	High	12	Check alert distribution list
	2	Alert received but not read	Medium	Medium	Medium	12	Alert acknowledgment system
	3	Alert read but not acted on	High	Low	High	12	Alert escalation protocol
	4	Alert acted on but incorrectly	High	Low	High	12	Alert response training

C. Derive realistic Target Lead Times



D. Organize Awareness and Training Sessions (especially to process key players)



A. Alert decision making process

Current Status

- Three decision points in the present process
 1. Decision to **send PAI** to manufacturer of concerned item;
 2. Decision to **issue an ESA Alert**, based on manufacturer's reply;
 3. Decision on the **use of user's feedback** on published Alert;
- All decision to be made by the ESA Alert Committee (EAC)
 - Fixed: EAC Chairman, EA Focal Point;
 - Ad-hoc: Technical Experts, projects representatives concerned .

Main issues

- Decision by Alert Committee sometimes requires **many iterations**;
- External key parties seldom involved** in decision making process → missed opportunities to share knowledge & buy-in of corrective actions;

Intended improvements

- Put together all those needed to make a decision, instead of parallel consultations;
- Involve external parties, as decided by the EAC → **Required by revised EAS Operational Procedure**;

In all cases, only ESA has the authority to decide on ESA Alerts.

B. Process FMEA

☞ Current Status

- ☞ The present process is complex and time consuming

☞ Main issues

- ☞ Lead time too long
- ☞ Workload to issue an Alert too high

☞ Intended improvements

- ☞ Improve responsiveness of Tech Experts → pre-defined list; training;
- ☞ Reduce iterations in the decision making process → actual meetings, when necessary;
- ☞ Speed up the response from the Manufacturer → direct contacts/teleconferences, for proactive mutual clarification;
- ☞ Ensure availability of essential roles → back-ups identified for Technical Experts and ESA Alert Focal Point (EAFP);
- ☞ Minimise administrative steps and tasks → new tool;
- ☞ Improve support tools → upgraded tool derived from user needs;

C. Lead Time of Alert Processing

Current Status

- ☞ No prescribed target lead time;
- ☞ **Self-imposed target: four weeks** from the reception of the information to the release of the ESA Alert.
 - ➔ *Duration mainly driven by the two weeks allocated to the response from the manufacturer to a PAI.*

Main issues

- ☞ Target of 4 weeks **often exceeded**, sometimes by the order of months;
- ☞ **Target not realistic** with the actual process;
- ☞ Current Target perceived **too long** by almost 40% of users.

Intended improvements

- ☞ **Set realistic targets** for different scenarios - examples
 - ☞ simple case: **3 weeks**
 - ☞ nominal case: **5 weeks**
 - ☞ complex case, requiring the involvement of external parties: **8 weeks**
- ☞ Clearly **communicate** to users **target processing time** of Alerts and its justification, in order to manage their perception and expectations.

D. Awareness and Training Sessions

Current Status

- ☞ The Alerts system **Operational Procedure** is available to all users on the ESA web site;
- ☞ Latest issue of dates back to December 1998.

Main issues

- ☞ The existence of the **procedure is hardly known** by internal and external users;
- ☞ Users, even technical experts, are **generally unaware of the alert process**.

Intended improvements

- ☞ **Revise the Procedure** to reflect the new process → **new issue in Jan 2009**;
- ☞ **Better clarify process steps, roles and responsibilities** from the perspective of the users, both external and internal → **new procedure**;
- ☞ **Develop a checklist** to summarise the detailed tasks of the alert process → **Workflow and help online**;
- ☞ **Prepare and deliver awareness and training sessions**, to be targeted to the key players of the process, as well as to generic users of the system → **develop material, plan and deliver training, after release of new procedure and tool**.

A. Establish an EAS User Group to address major Alerts and improvement actions [TBC]



2. Closer involvement of external Users

B. Actively involve Key Partners in the decision making process of specific Alerts



C. Organize Workshops to promote the use of EAS and to survey users' needs



Participation of External Users (1/2)

- ☞ **Current Status [ref, ESA ADMIN(95)15 – ESA Alert System]**
 - ☞ **Main external participants in the EAS**
 - ☞ contractors involved in ESA projects;
 - ☞ other space projects managed by national space Agencies and commercial organisations;
 - ☞ R&D and technological entities, test centres, launch and operation centres.
 - ☞ **External Participant's commitments**
 - ☞ actively notify failures and problems;
 - ☞ cooperate to the investigation of Alert information, as appropriate;
 - ☞ give feedback information for distributed Alerts;
 - ☞ Assign Alert Coordinator.
 - ☞ **Alert Coordinator tasks**
 - ☞ raise information on potential alerts;
 - ☞ ensure adequate distribution of the published Alerts within their organizations;
 - ☞ channel the feedback on published Alerts back to ESA.
- ☞ **Main issues:**
 - ☞ The **contribution of external users** in terms of notification of failures and feedback to published ESA Alerts has been **very limited**;
 - ☞ The **effectiveness of the Alert Coordinator's** role cannot be evaluated .

Participation of External Users (2/2)

☞ Intended improvements

A. Create an **Alerts User Group** with ESA and external users, to meet at TBD frequency.

☞ Main objectives:

- ☞ Review the **status of major alerts**;
- ☞ Propose and prioritise action for **improving the operations** of the EAS;
- ☞ Review and restate the role and duties of **Alert Coordinators**.

➔ **Preliminary idea, proposed here to get feedback.**

B. Actively involve **key players in the alert process**, in order to:

- ☞ take advantage of their knowledge on same / similar failures;
- ☞ facilitate the implementation of the recommended actions in projects.

➔ **Involvement of external parties implemented in new EAS procedure;**

➔ **Easier for external users to initiate an alert on the new tool.**

C. Hold **Workshops** with industry and NSA every 2-3y to:

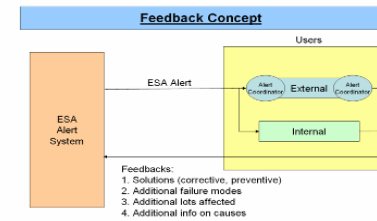
- ☞ promote the EAS;
- ☞ Survey users' needs.

➔ **today's workshop**

A. Sensitise all EAS participants and make easier for them to provide feedback



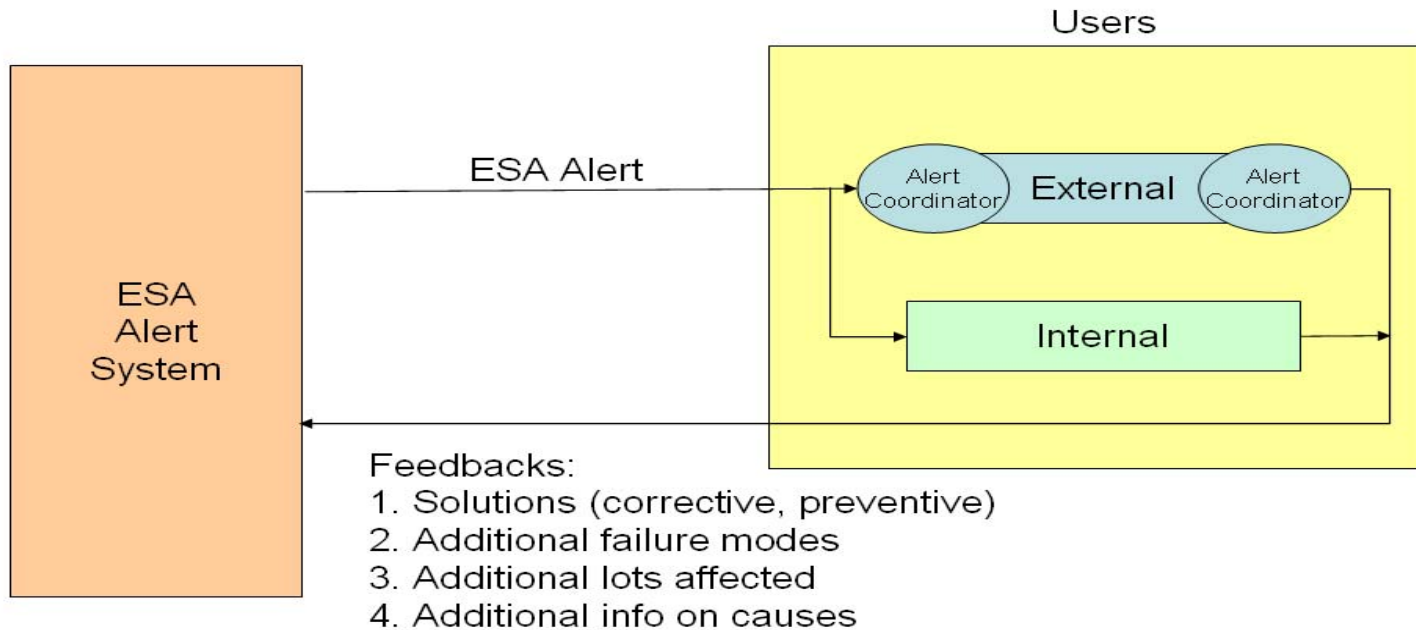
B. Clarify and reinforce ESA internal management of alerts



3. Systematic Feedback & follow up for every Alert

C. Clarify and improve the follow-up of actions within the EAS

Feedback Concept



Distinction is made between:

- **voluntary feedback to the EAS**, which is expected from each participant on published ESA Alerts;
- **mandatory assessment within each project**, which is contractually required for each ESA Alert.

A. Voluntary feedback on every alert

Current Status

- All participants expected to provide feedback on published Alerts.

Main issues

- Voluntary feedback to the EAS is a **rare event**, from both external and internal users;
- Many users are **even unaware** that they are expected to provide;
- Users would not know **HOW to provide** feedback, anyway.

Intended improvements:

- Give **reminders** to all EAS users that feedback is expected and how to provide it:
 - on the e-mail notification of a new ESA Alert → **implemented**;
 - when entering in the EAS web site → **implemented**.
- Provide **clear and easy way** of giving feedback
 - **Dedicated feedback function within new EAS tool, when viewing an alert**;
 - **Separate function to provide general comments and suggestions for improvement**.

B. ESA internal management of Alerts

Current Status

- ESA contractors **assess** the relevance, impacts and actions for each ESA Alert, and report to the respective ESA projects counterparts, as required contractually;
- The ESA PA managers report internally the status of alerts.

Main issues

- Within ESA there is not a **centralised and systematic follow-up of actions** resulting from ESA Alerts.

Intended improvements

- Establish a systematic tracking for
 - Relevance** of ESA Alerts to each ESA project;
 - Applicability of actions** recommended to users;
 - Status of closure** of actions.
- EAC to declare an **alert closed – for ESA internal purposes** – when satisfied with closure of actions in all projects.

- **Specific instructions issued by TEC-Q to ESA project PA managers.**
- **Tracking system implemented within the EAS tool.**

C. Follow-up of actions within the EAS

Current Status

- ☞ The current EAS **Operational Procedure** stipulates that:
 - ☞ The ESA Alert Committee shall be responsible of the **closeout of corrective and preventive actions of general nature**;
 - ☞ Such actions to be **clearly identified** on the released ESA Alert;
 - ☞ The ESA Alert Focal Point to follow-up these actions and advise on their closeout.

Main issues

- ☞ **Follow-up of actions within the EAS is sporadic**, and not well documented and reported.

Intended improvements

- ☞ **Implement systematically the intent of the procedure, for maximum benefit to the EAS participants.**
- ➔ **The revised EAS Operational Procedure restates that the EAC may decide to follow-up the following types of actions:**
 - ☞ *Manufacturer actions, typically those of preventive and long-term nature;*
 - ☞ *User actions with significant and wide impact on several projects, for which a coordinated follow-up would be beneficial.*
- ➔ **This intent will be applied with renewed rigour.**

A. Link the ESA Alert System to other Alert Systems (NASA, CNES, TAS, ASTRIUM, JAXA)



D. Improve the EAS web pages and supporting tool

OLD



New



B. Clarify the validity of ESA Alerts

C. Widen the access to the EAS, though in a controlled fashion

4. More comprehensive & accessible, better supported

A. Interface with other Alert Systems

Current Status

- As per ESA ADMIN, **interfaces should be established with other existing Alert systems;**
- An agreement is currently in place to redistribute **NASA Parts Advisories** (when obtained).

Main issues

- EAS exports to other systems, but the import and re-distribution is virtually nil;**
- Formal & legal issues.

Intended improvements

- Clarify policy and responsibilities → **ESA has clarified policy for exchanging alerts with other systems (see also new EAS procedure);**
- Establishing specific cooperation agreements, when appropriate:
 - NASA**, for redistribution of Parts Advisories → **ongoing**
 - GIDEP** → **no exchange, or even use, feasible!**
 - CNES**, for exchange of alerts → **ESA Alerts provided; access to CNES Alerts provided; redistribution of CNES Alerts to be discussed**
 - Astrium** and **TAS**, for potential treatment as ESA Alerts → **ongoing**
 - JAXA**, for exchange of alerts → **ESA Alerts provided; ongoing for JAXA Alerts (language)**

B. Validity of ESA Alerts

Current Status

- ☞ The current EAS **Operational Procedure** stipulates that: *“Issued ESA Alerts will be reviewed annually ... for the validity of the information contained and current relevance”*

Main issues

- ☞ Review of validity is not implemented

Intended improvements

- ☞ Implement the review of validity

➔ The revised EAS Operational Procedure restates that *published ESA Alerts shall be reviewed, at least once a year, to determine their status in accordance with the following criteria:*

- Active: Alerts affecting items likely to be:
 - still available on sales, in the distribution chain or in storage; OR
 - embedded in assemblies, equipments or spacecrafts, not yet launched or in early operations.
- Obsolete: Alerts that are not 'active'
- Withdrawn

➔ The status of validity will be implemented asap in the new EAS tool

C. Access to the ESA Alert System

☞ Current Status

- ☞ External participants are required to appoint an **Alert Coordinator**;
- ☞ For large organizations with multiple sites, an **Alert Coordinator for each site** is allowed.

☞ Main issues

- ☞ Some participants request to give **access to more users**;
- ☞ On the contrary, some organization wishes to **keep control** of the flow of Alerts and the nomination of Alert Coordinators, as per current rules;
- ☞ ESA does not want neither **dilute the commitment** of recipients in processing ESA Alerts, nor breed **large and out-dated distribution lists**.

☞ Intended improvements

- ☞ **Allow broader access, but still controlled by the participating organizations and preventing the accumulation of inactive users.**
- ➔ **The revised EAS Operational Procedure states that ‘Additional Subscribers’ may be allowed at the request of the same organization’s entity that nominates the Alert Coordinators, if this can be useful to expedite the distribution of ESA Alerts. However, these additional subscriptions have the duration of one year, with automatic removal from the distribution list after this period, unless an extension is requested with due advance.**

D. EAS web pages and supporting tool

☞ **Current Status:**

- ☞ ESA Alerts are made available to users through the EAS web pages;
- ☞ The storage of Alert is made on a server managed by a very old and not maintained Lotus notes application.

☞ **Main issues:**

- ☞ As per users' feedback, these pages are deficient in terms of presentation, search and export capabilities;
- ☞ The SW application that supports administrative tasks is out of date;
- ☞ There have been occasional loss of data in the past.

☞ **Intended improvements:**

- ☞ Several Improvements for:
 - ☞ EAS web pages
 - ☞ E-mail notifications
 - ☞ Forms
 - ☞ SW Tool Engine
 - ☞ SW Tool features (search, filter, feedback, comments, etc...)

➔ **Implemented in new tool.**

Conclusion

- **Extensive improvements** have been derived from the feedback from users and key people involved closely in the process;
- These improvements should result in a significant **enhancement of the utility** of the ESA Alert System;
- This is not the end of the story - **Suggestions and opportunities for further improvement** will be captured during and after this workshop.