

# Experience the thrilling reality of the Apollo 13 – simulation game

Learn and experience the benefits of ITIL V3 best practice solutions during the 'Apollo 13 - an ITSM case experience™'

## 'Houston, we have a problem'

Fifty-five hours and fifty-five minutes into the mission. On board Apollo 13 the astronauts suddenly hear a loud 'bang'. The bang is the explosion of the liquid oxygen tank #2 in the Service Module, providing vital oxygen used by the fuel cells that are Apollo's primary power source. The backup battery-powered electric supply in the Command and Service Module (CSM) has a lifetime of up to ten hours. Unfortunately, Apollo 13 and the astronauts are 87 hours from home. Their spacecraft is slowly dying. They have a serious problem, unless you and the ground support staff start working as a team to solve this problem. But remember, time is running out. Fast. Welcome to the 'Apollo 13 – an ITSM case experience™' simulation game.

## One-day training offering real life situations

The 'Apollo 13 – an ITSM case experience™' simulation game is an intense, one-day training in which ITIL V3 concepts and processes are experienced through the use of an interactive game. In this training, real life situations taken from the Apollo 13 mission are simulated. You will work in a team, playing the roles of the Mission Control Center in Houston. Your mission: bring the crippled spacecraft and its crew safely home. By doing so, you and your colleagues will learn and experience all the benefits of ITIL best practice solutions.



### **James A. Lovell, Jr.**

*'This is the crew of Apollo 13 wishing everybody there a nice evening, and we're just about ready to close out our inspection of Aquarius (the Lunar Module) and get back for a pleasant evening in Odyssey (the Command Module). Good night.'*

*Nine minutes later, oxygen tank #2 blew up, causing #1 tank to also fail. The Apollo 13 Command Module's normal supply of electricity, light and water was lost, and they were about 200,000 miles from earth.*

Source: NASA.



**Apollo 13**  
an ITSM  
case  
experience™



Build & launch	<i>'Fitting it all together and making it fly'</i>	<ul style="list-style-type: none"> <li>• Translating NASA Strategy and objectives into Mission Operations Control capabilities.</li> <li>• Designing the 'Build &amp; launch readiness service' and transitioning the Apollo 13 rocket into Mission Operations control.</li> <li>• Managing the complex configuration of components that make up Apollo 13.</li> <li>• Managing the release, build, and testing of the Apollo 13 vehicle.</li> <li>• Integrating the vehicle electrical, flight and communications systems with Mission Operations Control (Service Operations).</li> </ul>
Earth orbit & lunar approach	<i>'The earth is getting smaller and smaller...'</i>	<ul style="list-style-type: none"> <li>• Designing &amp; Transitioning the service for 'Maintaining &amp; Supporting the mission.'</li> <li>• Designing and implementing Mission Operations Control (Service Operations) including: <ul style="list-style-type: none"> <li>- crew communication and support (Service desk)</li> <li>- select critical components for active monitoring (Event management)</li> <li>- dealing with incidents and finding solutions (Incident and Problem management)</li> <li>- handling crew requests (Request Fulfillment).</li> </ul> </li> <li>• Invoking emergency abort procedures as availability of critical systems signals an approaching disaster situation (Availability and Continuity).</li> </ul>
Transearth coast	<i>'The long journey home'</i>	<ul style="list-style-type: none"> <li>• Managing operational activities.</li> <li>• Applying pro-active problem management to prevent life threatening situations.</li> <li>• Making the oxygen and power last for the long journey Home. (Capacity Management).</li> <li>• Planning and executing untested changes to ensure a safe return path home. (Change Management).</li> <li>• Managing Access to critical on board application software (Access management).</li> <li>• Ensuring effective knowledge capture &amp; sharing making CapCom more effective.</li> </ul>
Re-entry and splashdown	<i>'Making it back alive'</i>	<ul style="list-style-type: none"> <li>• Proactively working to prevent a major problem as carbon dioxide build up threatens the astronauts' safety (Capacity Management, Problem Management and Configuration Management).</li> <li>• Planning and executing a mid-course correction to speed up the journey home.</li> <li>• Managing the critical level of capacity to power up the Command Module and ensure all critical systems are operating (Capacity Management and Availability Management).</li> <li>• Demonstrating your capability and right to right to manage Apollo 14.</li> </ul>



### What is the simulation game about?

In this game, you will work in a team consisting of 8 to 13 Mission Control Center members. This team will experience the four phases of the mission (as described above), within the simulation the team must translate the NASA strategy into service designs for 'Building & Launching' and for 'Maintaining and Supporting' the mission. The team must transition the Apollo 13 launch vehicle and supporting facilities into live Service operation. During the live mission operation the team will be confronted with events, incidents and requests from the crew. In each round, the team undergoes the following steps: designing or improving their processes, running the simulation, reflecting, and reporting. Throughout the game various ITIL processes are necessary to enable ground staff, the crew and the Mission Director to prioritize decisions and choices in order to resolve problems and make timely changes to the spacecraft configuration and its trajectory. *Although the game has been designed to learn ITIL concepts Apollo 13 can equally be applied in any organization wanting to experience the benefits of process based ways of working and team working.*

### Mission reviews

Within each round of the game, the team will apply 'Continual Service Improvement' practices aimed at evaluating and improving the quality of their services and ensuring a continual alignment with changing NASA demands. At the start of each round the teams must define what they need to measure in relation to strategic goals. Throughout each round they must ensure they can gather data, at the end of each round the team will process and analyze the data and use the findings to identify, prioritize and select improvement initiatives, justifying the choices to the Mission Director.

### Post Mission Review

At the end of the simulation participants will reflect on their learning experiences, identifying what went well and what went wrong throughout the lifecycle of the mission. They will analyze and discuss whether their IT Service management capabilities were a strategic asset enabling NASA to achieve its business goals. They will be able to relate what they have seen, felt, experienced and learnt to their own working environment and identify Service improvement opportunities in their own organization.



*'As an aborted mission, Apollo 13 must officially be classed as a failure, the first in 22 manned flights. But, in another sense, as a brilliant demonstration of the human spirit triumphing under almost unbearable stress, it is the most successful failure in the annals of space flight'. Excerpted from W. David Compton, Where No Man Has Gone Before: A History of Apollo Lunar Exploration Missions (Washington, D.C.: NASA SP-4214, 1989).*



## NASA Service Strategy

Teams will receive the NASA service strategy document and a Balanced Scorecard (BSC) representing the Service Level Agreements (SLAs) to be achieved (see below). At the end of each phase, teams will report on their performance in relation to the service levels.

The teams must demonstrate they can manage costs and risks and at the same time deliver performance and business value. Prior to each phase, elements of the ITIL theory can be explained in relation to the processes that will be encountered in the coming round. The actual Apollo 13 mission will be reviewed and related to the ITIL processes at the end of each phase, showing how mission success was accomplished in the end by using these processes.

## The game is designed for

- ICT employees, ICT managers, process managers, team managers, and others who need to improve their working processes.
- Employees requiring (more) ITIL knowledge or experience.
- Employees who have followed the ITIL Foundation course and want to experience the ITIL processes in practice.
- Employees responsible for applying best practices or improving their own processes and procedures.
- Managers and employees wanting to see, feel and experience the benefits of process based ways of working.

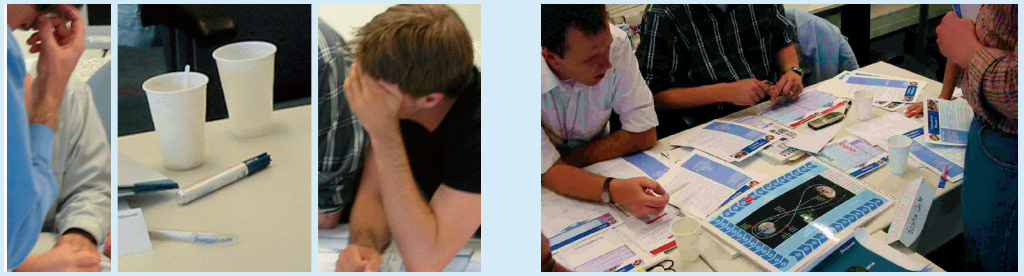


## Goals of the simulation game

- You will learn how to use ITIL to create IT Service management capabilities that are a strategic asset.
- You will learn how good IT Service management capabilities enable you to manage cost and risk and at the same time deliver business value.
- You will learn how to translate business demands into service solutions and demonstrate measurable results.
- You will learn how to use a Continual Improvement approach for identifying and removing risks and weaknesses and for realizing performance improvements.
- You will learn how integrated People, Process, Products and Partners enable you to deliver value.
- You will learn how good management tooling will help manage & control the workflow more effectively and efficiently and support knowledge capture and sharing.
- You will understand the interdependency of processes.
- You will learn how to co-operate and how to improve working processes by designing and implementing as a team.
- You will learn the importance of clearly defined, agreed, understood and embedded tasks, roles, responsibility and accountability.
- You will have gained insight into possible improvements in your own working environment.

*Perfection is difficult to achieve. It is even more difficult to maintain. The imperfection in Apollo 13 constituted a near disaster, averted only by an outstanding performance on the part of the crew, the ground control team and the processes and technology that supported them. The 'Apollo 13 – an ITSM case experience™' simulation game will bring out the best in you. Are you ready to give it your best shot?*

Service Level Area	Requirement	Notes
Innovation and learning	<ul style="list-style-type: none"> <li>• On time launch</li> <li>• Deploy the Apollo Lunar Surface Experimental Package (ALSEP).</li> <li>• Take pictures of landing sites for future missions.</li> </ul>	<ul style="list-style-type: none"> <li>• Yes or No.</li> <li>• Yes or No.</li> </ul>
Customer	<ul style="list-style-type: none"> <li>• Astronaut safety measured as a percentage.</li> </ul>	<ul style="list-style-type: none"> <li>• At the start of the game this is 100%. If events and situations are incorrectly dealt with, this will be reduced by a predefined % value.</li> </ul>
Internal processes	<ul style="list-style-type: none"> <li>• Percentage of incidents resolved in phase.</li> <li>• Average incident resolution time.</li> <li>• Overall process performance.</li> </ul>	<ul style="list-style-type: none"> <li>• The Service Level Manager will gather incident logs to determine the percentage of incidents resolved and the average resolution time.</li> <li>• Internal process performance begins at 100. If events and situations are incorrectly dealt with, this is reduced by a predefined amount per event.</li> </ul>
Financial	<ul style="list-style-type: none"> <li>• Cost control.</li> </ul>	<ul style="list-style-type: none"> <li>• Initial costs should be \$ 157,780,000. Incorrectly handled events and situations will cause additional costs.</li> </ul>



### The uniqueness of this game

- The entire lifecycle of services is used within the learning process.
- A balanced set of performance indicators, relating to business demands for UTILITY (Increase in gains) and WARRANTY (decrease in possible losses) is used.
- The Mission Operations Control organization including the Suppliers is closely related to an IT Service organization and its network of suppliers.
- Service level reporting is required at the end of each round to identify risks, costs and demonstrate Performance and value.
- All four game rounds are different and add increasing levels of complexity ensuring that the participants continually improve their capabilities.
- Between game rounds participants apply Continual Improvement approaches.
- The effect of improvements can be measured and demonstrated.
- Quality frameworks such as ISO/IEC 20000 can be used during the game to help identify non-compliance issues and specify improvement needs.
- Real life events and situations are used for reflection purposes.

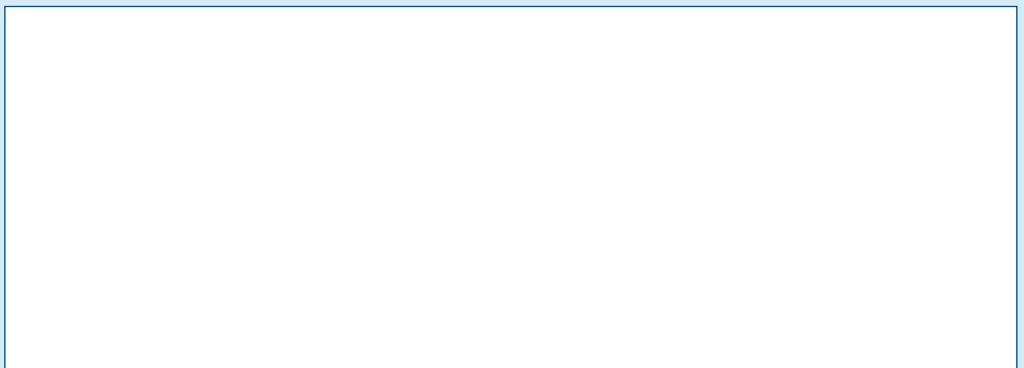
### What customers say:

- 'Really good, fun and an original way of simulating reality'.
- 'A real eye opener, you experienced the chaos when processes broke down'.
- 'Confronts you with decisions and choices that will have to be made'.
- 'Helps understand how priorities change as time goes by...'
- 'We can see the cost of doing things wrong'.
- 'Time pressure is like real life – it's about planning and making choices'.
- 'We were confronted with the need to take personal ownership'.
- 'I went back to the office after the Apollo sessions and everyone is talking about how they can use the ITIL concepts on their existing projects. There are Saturn V rockets on every whiteboard'.
- 'This went way over my expectations. I'm nothing less than thrilled and feel you've increased our chances of a successful ITIL project by 100%'.

### The simulation game's initiators

This simulation game has been developed by Jan Schilt and Paul Wilkinson. They are both specialists in designing and developing creative ways of learning. Jan Schilt has a degree in HRD, is a certified ITIL Service Manager and uses learning processes in developing ICT organisations. Paul Wilkinson is the author of one of the ITIL V2 publications and has many years of practical experience in managing organizational change programs. Paul is also co-author of the 'IT Service Management from Hell' publications. Jan Schilt and Paul Wilkinson are both successful speakers and workshop leaders.

**For more information about the simulation game check out [www.gamingworks.nl](http://www.gamingworks.nl) or contact:**



The builders of the 'Apollo 13 - an ITSM case experience™' would like to thank and acknowledge NASA as the source of the actual Apollo 13 mission photo material used, and Universal Pictures as the source and copyright owners of the Apollo 13 motion picture photo material used.