

IBM Engineering AI Hub

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Innovation is
the fundamental
driver of growth,
differentiation,
and adaptability



Finding the time to innovate is challenging



Lack of automation for time-consuming, error-prone, and repetitive tasks



Regulatory reporting and meeting audit requirements are time-consuming



Accelerating delivery cycle times without compromising quality



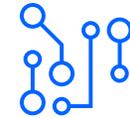
Difficult to align on requirements with suppliers



Increasing complexity across multi-tier value chains with little room for error



Insufficient insights and reporting for data-driven decisions



Lack of transparency and collaboration across teams

Gen AI agents are helping engineering teams ...

innovate faster by improving engineering efficiencies
through AI-assisted automations.

Engineering efficiencies through AI-assisted automations

IBM Engineering AI Hub 1.2

IBM Engineering AI Hub is a set of AI agents designed to help automate repetitive, time-consuming engineering tasks, freeing engineers to focus more on creative works, solving problems, and delivering complex, mission-critical, secure systems and software with speed.



Task-level automations

Designed to automate repetitive, time-consuming tasks



Data-informed responses

Outputs grounded in your engineering data



Human-centered validation

AI recommends. You review and confirm.

Enterprise ready

Designed to grow across engineering disciplines

IBM Engineering AI Hub is an add-on to IBM Engineering Lifecycle Management with agents that address these use cases:

- 01 **Requirement quality analysis**
Analyzes requirements against industry standards to generate quality scores with detailed feedback, with recommendations for wording enhancements that raise requirement quality scores

This helps engineers to build stronger requirements, teams to accelerate reviews, and managers to gain visibility into quality trends to identify risks early.

- 02 **Engineering Assistant**
Provides a natural language interface to requirements designed for conversational queries, topic-based searches, summaries, and translations.

This helps engineers access information faster, teams collaborate more effectively across global projects, and managers see improved alignment and reduced misinterpretation.

- 03 **Work Item synopsis**
Generates concise synopses of complex, long-running tasks, defects, and features, including key context, progress, and risks.

This helps engineers save time ramping up as they switch contexts, teams communicate more effectively, and managers gain clearer visibility into ongoing work.

- 04 **MBSE use case discovery**
Identifies use cases and actors in natural language requirements and creates corresponding model elements and use case diagrams in SysML.

This helps engineers to move faster into the RFLP (requirements, functional, logical, physical) design framework.

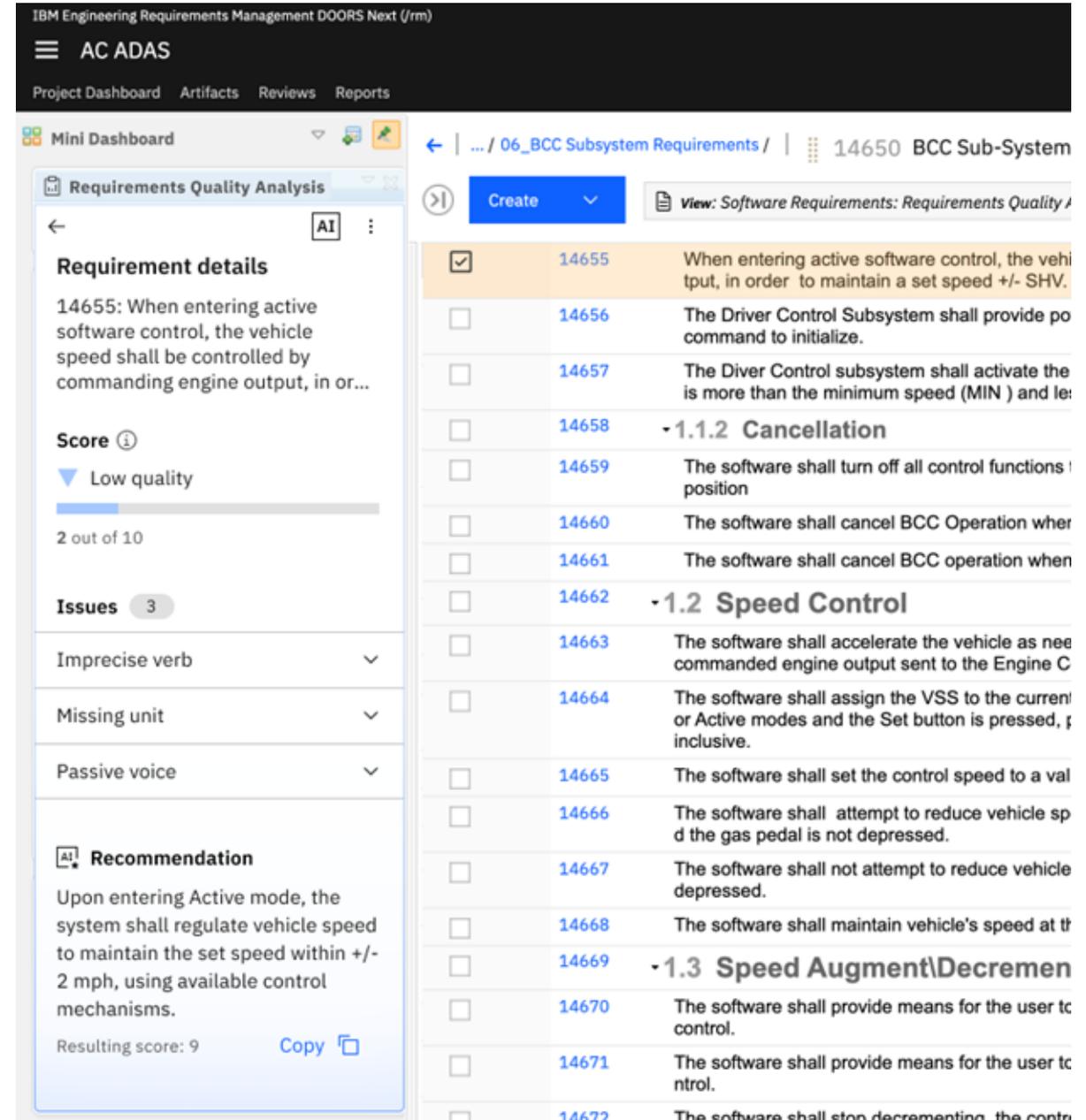
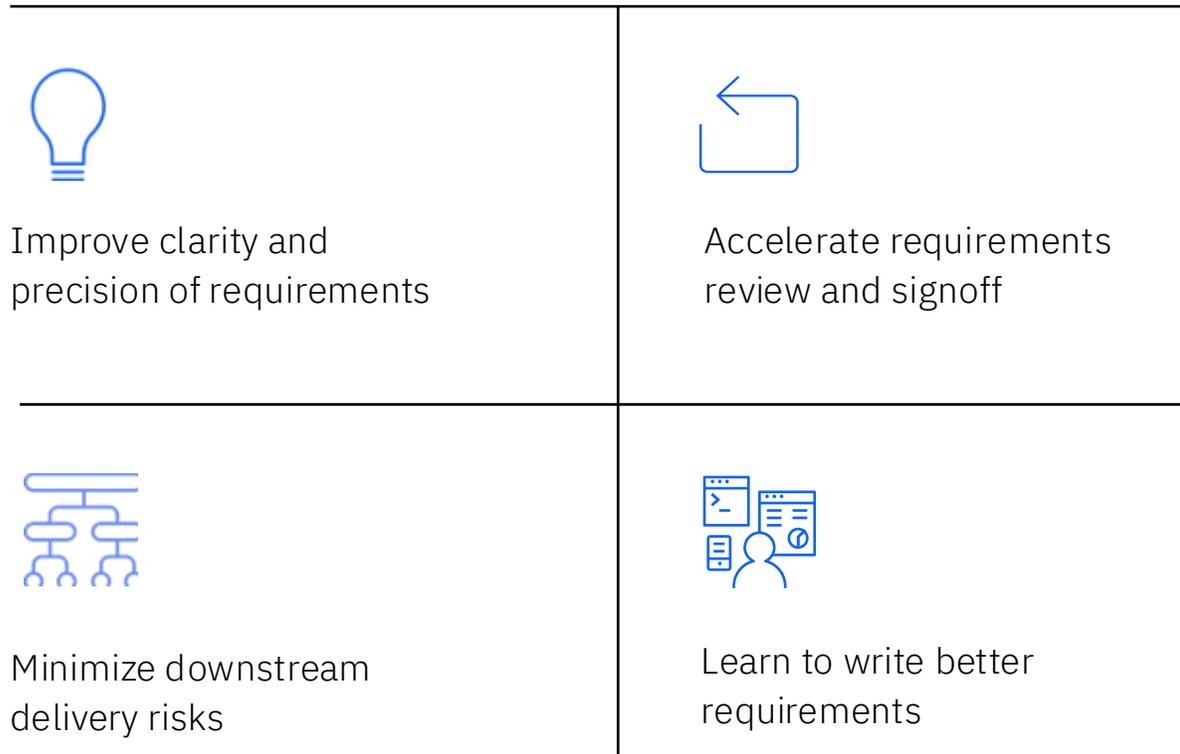
- 05 **Work Item compose** New in v1.2
Creates structured, high-quality drafts of epics, features, and user stories based on the selected work item type and planning level.

This helps teams accelerate agile-at-scale planning, reduce time spent on repetitive authoring, and improve the consistency and completeness of work item details.

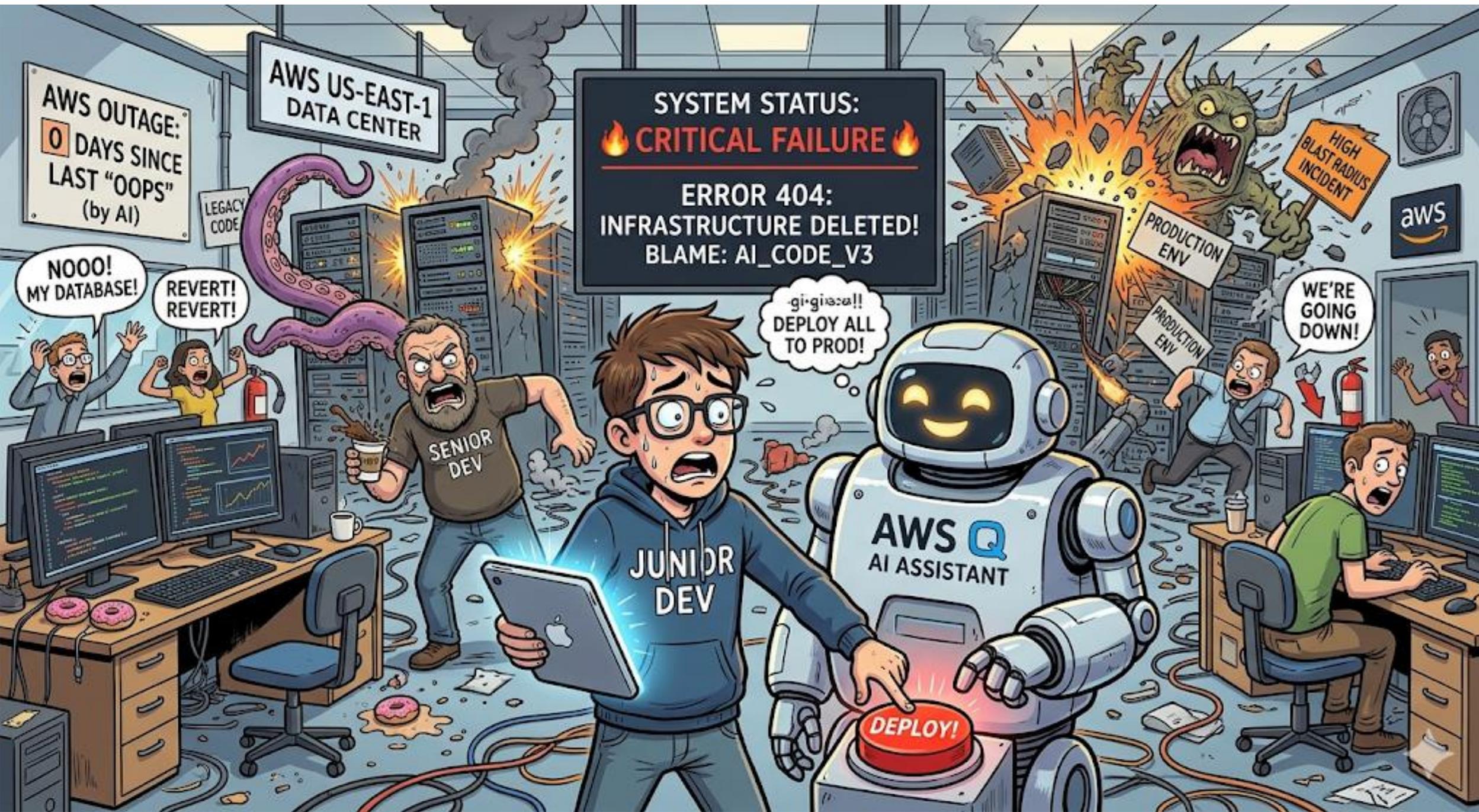
Requirement quality analysis

Analyze requirements against industry standards to generate quality scores with detailed feedback, with recommendations for wording enhancements that raise requirement quality.

Requirements engineers receive actionable suggestions designed to:



The screenshot displays the IBM Engineering Requirements Management DOORS Next interface. The main window shows a 'Requirements Quality Analysis' panel for requirement 14655. The requirement text is: '14655: When entering active software control, the vehicle speed shall be controlled by commanding engine output, in or...'. The score is 'Low quality' (2 out of 10). The analysis identifies three issues: 'Imprecise verb', 'Missing unit', and 'Passive voice'. A recommendation is provided: 'Upon entering Active mode, the system shall regulate vehicle speed to maintain the set speed within +/- 2 mph, using available control mechanisms. Resulting score: 9'. A 'Copy' button is visible next to the recommendation. The background shows a list of other requirements, including 14656, 14657, 14658, 14659, 14660, 14661, 14662, 14663, 14664, 14665, 14666, 14667, 14668, 14669, 14670, 14671, and 14672.



AWS OUTAGE:
0 DAYS SINCE
LAST "OOPS"
(by AI)

**AWS US-EAST-1
DATA CENTER**

SYSTEM STATUS:
CRITICAL FAILURE
ERROR 404:
INFRASTRUCTURE DELETED!
BLAME: AI_CODE_V3

**HIGH BLAST RADIUS
INCIDENT**

PRODUCTION ENV

PRODUCTION ENV

**WE'RE
GOING
DOWN!**



**NOOO!
MY DATABASE!**

**REVERT!
REVERT!**

**SENIOR
DEV**

**JUNIOR
DEV**

**gi-gi-a-a!!
DEPLOY ALL
TO PROD!**

**AWS Q
AI ASSISTANT**

DEPLOY!

Engineering assistant

Use a natural language interface to requirements, enabling conversational queries, topic-based searches, summaries, and translations.

Requirements engineers interact with complex requirements specifications in natural language so they can:



Get access to relevant information



Reduce misinterpretation of large volumes of requirements



Improve team collaboration across global projects



Better alignment and shared understanding of requirements

The screenshot displays the IBM Engineering Requirements Management DOORS Next interface. The top navigation bar includes 'AC ADAS' and 'Project Dashboard | Artifacts | Reviews | Reports'. The main content area is split into two panes. The left pane, titled 'Engineering Assistant', shows a chat conversation. The user asks: 'Do the requirements mention the lowest speed the cruise control would work at?'. The assistant, 'watsonx', responds: 'Yes, the requirements do specify the lowest speed for cruise control activation. According to Requirement 14688, the cruise control is expected to work at 30 mph or higher.' The user then asks: 'Would you like to see if any requirements mention the highest speed for cruise control?'. The assistant provides one item: 'The cruise control system shall be operable at speeds greater than or equal to 30 mph. ID: 14688'. The right pane shows a list of requirements for '06_BCC Subsystem Requirements'. The list includes items like '14651 -1 Basic Cruise Control Subsystem S Requirements', '14652 -1.1 Activation/Deactivation', '14653 -1.1.1 Initialization', '14654 The software shall provide means for the driver to set the cont', '14655 When entering active software control, the vehicle speed shall gine output, in order to maintain a set speed +/- SHV.', '14656 The Driver Control Subsystem shall provide power on self test command to initialize.', '14657 The Diver Control subsystem shall activate the BCC system or sensors is more than the minimum speed (MIN) and less than', '14658 -1.1.2 Cancellation', '14659 The software shall turn off all control functions to cancel the sy to off position', '14660 The software shall cancel BCC Operation when the 'Off' button', '14661 The software shall cancel BCC operation when a Relevant Fa', '14662 -1.2 Speed Control', '14663 The software shall accelerate the vehicle as needed to maintain commanded engine output sent to the Engine Control Module.', '14664 The software shall assign the VSS to the current vehicle speed' Standby or Active modes and the Set button is pressed, provide MinSS and MaxSS, inclusive.', '14665 The software shall set the control speed to a value supplied by t', '14666 The software shall attempt to reduce vehicle speed by lessenin ode and the gas pedal is not depressed.', '14667 The software shall not attempt to reduce vehicle speed by lesse pedal is depressed.', '14668 The software shall maintain vehicle's speed at the target speed'. The bottom of the interface shows the IBM logo.

Work Item synopsis

Generate synopsis of complex, long-running tasks, defects, features, and other work items, highlighting context, key details, status, working notes, and risks.

By reducing the need to read lengthy descriptions, comments, etc., engineers and managers can:

 <p>Improve productivity and communication</p>	 <p>Accelerate the flow of work with shorter handoffs</p>
 <p>Reduce time required to ramp up as they switch contexts</p>	 <p>Make faster decisions based on visibility into work</p>

IBM Engineering Workflow Management (/ccm)

Automakers Inc.

Project Dashboards ▾ Work Items ▾ Plans ▾ Source Control ▾ Builds ▾ Reports ▾

Work Items /

Defect 967

Summary: * Cruise Control Fails to Maintain Target Speed on Inclines and Declines In Development

Overview Links Approvals History **Synopsis**

Workitem Synopsis

This feature uses AI to generate a concise synopsis of complex, long-running tasks, defects, features, and other types of wo. The accuracy of the generated synopsis may vary. Please double-check responses.

Note: This synopsis has been generated by AI and may not have been verified for accuracy by a human reviewer.

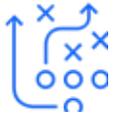
Details

- Description:** The cruise control system fails to maintain the target speed when the road grade increases to $\pm 3-5\%$. 94-106 km/h, with rapid throttle transitions causing cabin "lurching." No diagnostic trouble codes (DTCs) are present TORQ_CLAMP=1 and I_ACCUM above limit.
- Expected Behavior:** The system should maintain the driver's set speed within ± 2 km/h on grades up to 5%. Throttle audible surging or speed "hunting." Anti-windup should prevent integral accumulation during torque saturation, and should kick in above 2% grade. The system should disengage only on explicit driver input or safety conditions, never
- Steps to Reproduce:**
 - Precondition: Battery SOC > 40%, transmission in D, Normal drive mode, CCU v2.7.3-rc1, PTC heater ON.
 - Accelerate to 100 km/h on a test route with 3-5% sustained grade (≥ 1 km).
 - Press SET to engage cruise.
 - Observe cluster speed and feel throttle surging after ~10-20 seconds on grade.
- Variants:**
 - Eco mode: Issue intensifies (earlier torque clamp).
 - Sport mode: Reduced magnitude but still present on grades $\geq 5\%$.
- Environment / Context:**
 - Vehicle: C-SUV, MY2026 (8AT)
 - Test routes: Hillside Loop (grade 3.2-4.8%), AltHighway (altitude >1600 m)
 - Bench: HIL rig LongiRig-02 with grade simulation
- Resolution / Fix Plan:**
 - Options (with pros/cons):
 - Option A: Anti-windup + feed forward re-enable (hotfix) – Quick, low risk, config only; may need per-r
 - Option B: Add model predictive control (MPC) hill module – Best performance & comfort; longer dev/

Work Item compose

Create high-quality, well-structured draft of description and success/acceptance criteria for epics, features, and user stories.

With assistance on creating high-quality starting points of work items before downstream work begins, teams can:



Use time spent on manual authoring for other high-value work



Accelerate planning with confidence on having right scope



Improve clarity and consistency to ensure alignment across teams



Reduce rework, delays caused by incomplete and unclear details

New in v1.2

Note: This content has been AI-generated and should be reviewed for accuracy.

Problem Statement

Drivers often unintentionally drift out of their lanes, leading to potential accidents. This feature aims to address this issue by providing a lane-keeping assist system that helps drivers stay within their lane.

Business Value

Implementing Lane Keeping Assist (LKA) can significantly reduce the number of lane departure accidents, enhancing vehicle safety. This feature is crucial for meeting regulatory requirements and improving customer satisfaction, which can lead to increased market share and revenue. Failure to implement LKA may result in non-compliance with safety standards and potential legal issues.

Overall Use Case

The overall use case is for drivers who need to stay within their lane while driving to avoid accidents. The system will monitor the vehicle's position within the lane and provide corrective steering inputs if the vehicle begins to drift. This ensures that the driver remains safe and compliant with traffic rules.

User Needs

- **Driver:** Needs the vehicle to stay within the lane to avoid accidents. Requires the system to provide gentle steering corrections without disrupting the driving experience.
- **Passenger:** Needs to feel safe during the journey. Requires the system to operate seamlessly without causing discomfort.
- **Vehicle Manufacturer:** Needs to comply with safety regulations. Requires the system to be reliable and effective in reducing lane departure incidents.

Additional Context

This feature will integrate with the existing advanced driver-assistance systems (ADAS) to provide a comprehensive safety solution. The system will use cameras and sensors to

MBSE use case discovery

Identify use cases and actors in natural language requirements and creates corresponding model elements and use case diagrams in Rhapsody SE and Rhapsody 10.

Systems engineers apply use case discovery consistently across complex specifications to:



Accelerate the analysis of requirements



Easier to get started with modeling



Reduce the effort spent on manual tasks to get started



Improve traceability by auto-linking requirements to generated model elements

Use cases and actors discovered by AI

Showing **9 use cases** and **0 actors** (9 of 13 total items) **Filtered by: Use Cases**

Review, edit, and add the ones you want to your model

Search by name or description...

<input checked="" type="checkbox"/>	Name	Description
<input checked="" type="checkbox"/>	Uc Door Status Monitoring	Monitors the status of
<input checked="" type="checkbox"/>	Uc Side Door Open Detecti	Detects the opening
<input checked="" type="checkbox"/>	Uc Side Door Close Detecti	
<input checked="" type="checkbox"/>	Uc Trunk Open Detection	
<input checked="" type="checkbox"/>	Uc Trunk Close Detection	
<input checked="" type="checkbox"/>	Uc Door Status Tracking	
<input checked="" type="checkbox"/>	Uc Courtesy Light Control	
<input checked="" type="checkbox"/>	Uc Temperature Control	
<input checked="" type="checkbox"/>	Uc Temperature Adjustme	

Use cases and actors discovered by AI

Showing **3 use cases** and **1 actors** (4 of 4 total items)

Review, edit, and add the ones you want to your model

Actors (1/1)

Select	Name	Description
<input checked="" type="checkbox"/>	Driver	The driver enables and adjusts the set speed actions.

Use Cases (3/3)

Select	Name	Description
<input checked="" type="checkbox"/>	Enable Cruise Control	The driver initiates and performing a single ac

We are just getting started

This is just the beginning. The Engineering AI Hub has a flexible product architecture that positions IBM to expand the product scope in the future.

What are we thinking about for the future?

- **Additional capabilities** for existing agents
- **New agents** focused on other use cases of requirements, work items, and modeling, etc.
- Agents for use cases across **other disciplines** within the engineering 'V', like testing
- **More customizable and extensible** to suit diverse projects and programs
- **Extensible**: e.g., Run your own agents, multiple LLMs, vector store
- **Low-friction**: ELM data and data scopes (permissions, GCs, etc.)
- **Flexible deployment options**: on-prem watsonx.ai, k8s, air-gapped

The collage displays various components of the IBM Engineering AI Hub interface:

- Top Left:** A 'Mini Dashboard' for 'AC ADAS' showing an AI chat window with a question about requirements and a table of requirement IDs and contents.
- Top Right:** A 'Defect 967' overview page for 'Automakers Inc.' showing a synopsis and details.
- Middle Left:** A 'Loading AI suggestions...' screen with a progress bar and a list of 'What's happening' activities.
- Middle Right:** A 'Requirements Quality Analysis' screen showing a score of 2 out of 10 and a list of issues.
- Bottom Left:** An 'AI Suggestions' screen showing a table of use cases and actors discovered by AI.
- Bottom Right:** A detailed list of requirements with IDs and descriptions.

Thank you

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