

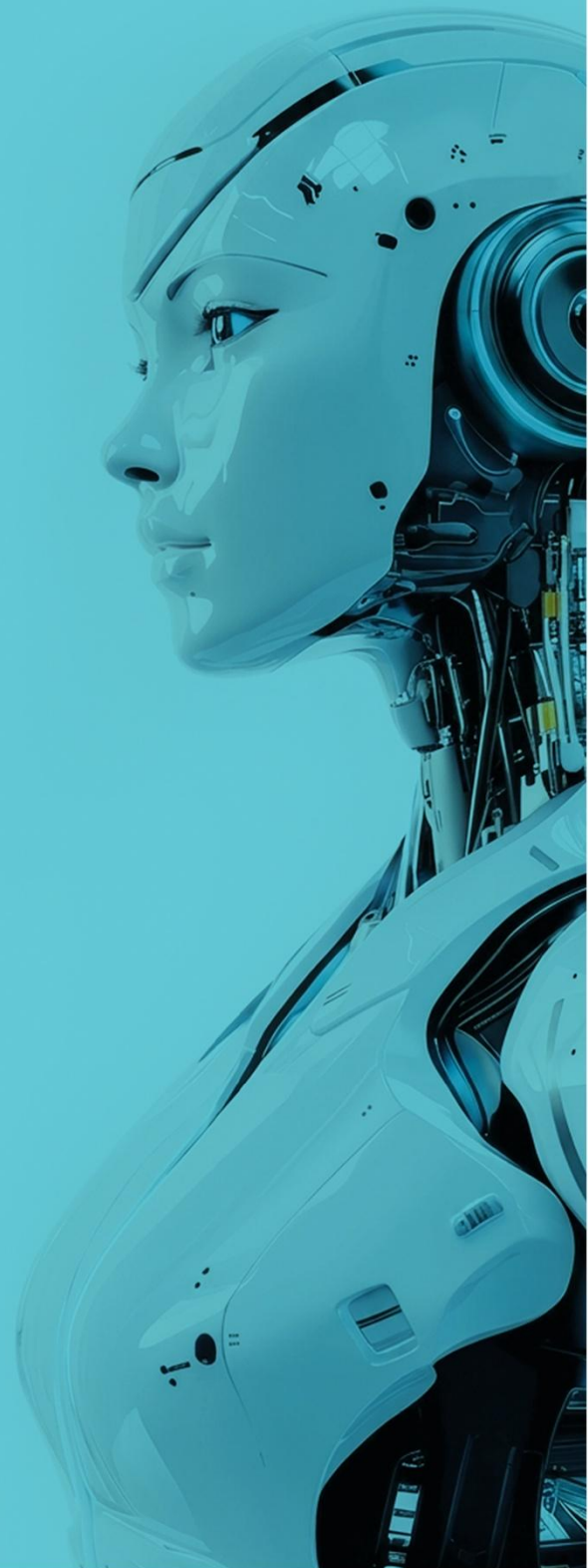


iCIIT 2026 | 4TH JUNE 2026

# PROCEEDINGS OF THE iCIIT CONCLAVE 2026



INFORMATICS  
INSTITUTE OF  
TECHNOLOGY





**PROCEEDINGS OF THE  
INTERNATIONAL CONCLAVE  
ON INNOVATIONS IN  
INFO-BUSINESS AND  
TECHNOLOGY 2026**

**FROM VIBE CODING TO AGENTIC  
ENGINEERING**

**ESTABLISHING RIGOR IN AI-NATIVE WORKFLOWS**

**4<sup>th</sup> JUNE 2026**

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# **iCIIT CONCLAVE 2026**

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# iCIIT CONCLAVE 2026 PROGRAM

IIT City Campus, Informatics Institute of Technology, 435, Galle Road, Colombo 3

on Thursday, 4th June 2026 at 9.00 AM onwards

| Time                | Agenda Item                                                                                                                                                                                                 |
|---------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 8:30 AM - 9:00 AM   | <b>Registration</b>                                                                                                                                                                                         |
| 9:00 AM - 9:05 AM   | <b>Welcome Address</b><br>Dr. Dinesh Arunatileka, Head, Research & Innovation, Informatics Institute of Technology                                                                                          |
| 9:05 AM - 9:15 AM   | <b>Intro &amp; concept</b><br>Dr. Ruvan Weerasinghe, Dean Research, Computing School, Informatics Institute of Technology                                                                                   |
| 9:15 AM - 9:25 AM   | <b>Purpose of the iCIIT Conclave</b><br>Mr. Mohan Fernando, Group CEO, Informatics Institute of Technology                                                                                                  |
| 9:25 AM - 10:05 AM  | <b>Keynote Speech on "Middle to middle: somethings don't change"</b><br>Mr. Nuwan Senaratna; Computer Scientist, Investor, Consultant                                                                       |
| 10:05 AM - 12:05 PM | <b>Session 1: Synopsis Presentations</b>                                                                                                                                                                    |
| 10:35 AM - 11:05 AM | <b>Networking &amp; Refreshments</b>                                                                                                                                                                        |
| 11:05 AM - 11:50 AM | <b>Synopsis Presentations: Session 2</b>                                                                                                                                                                    |
| 11:50 AM - 12:05 PM | <b>Panel Discussion</b><br><b>Panel members:</b> Mr. Nuwan Senaratna, Dr. Srinath Perera, Dr. Sankalpa Gamwarige, Ms. Shehani Seneviratne, Mr. Rukshan Jayaratna<br><b>Moderator:</b> Dr. Ruvan Weerasinghe |
| 12:05 PM - 12:20 PM | <b>Certificate &amp; tokens of appreciation distribution</b>                                                                                                                                                |
| 12:20 PM - 1:50 PM  | <b>Vote of Thanks</b><br>Dr. Thilak Chaminda, Associate Dean, Research, Informatics Institute of Technology                                                                                                 |
| 2:10 PM - 3:10 PM   | Networking & Lunch                                                                                                                                                                                          |

## Table of Contents

|                                                                                                     |    |
|-----------------------------------------------------------------------------------------------------|----|
| Message from the Chair of iCIIT Conclave 2026.....                                                  | ii |
| <b>SYNOPSIS</b> .....                                                                               | 1  |
| AI Copilot for ERP: Agentic Code Generation Across Middleware & UI .....                            | 2  |
| EWIS AEGIS: An Intelligent Platform for Automated Legacy Software Modernization .....               | 3  |
| Custom MCP for AI-Native Software Development and Agentic Engineering .....                         | 4  |
| The Agentic SDLC: Building Software With Agents .....                                               | 5  |
| ATLAS – Adaptive Tool Library and Agentic System: Tool Management for Autonomous Coding Agents..... | 6  |

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## **iCIIT Conclave 2026: From Vibe Coding to Agentic Engineering: Establishing Rigor in AI-Native Workflows**

The 7th iCIIT Conclave 2026, organized by the Informatics Institute of Technology (IIT), was held on 4th June 2026 under the theme **“From Vibe Coding to Agentic Engineering: Establishing Rigor in AI-Native Workflows.”** The conclave brought together academics, researchers, industry professionals, technology leaders, and students to explore the evolving landscape of software engineering in the era of artificial intelligence.

Since its inception, the iCIIT Conclave has served as a platform for fostering dialogue between academia and industry on emerging trends in information technology. This year’s theme addressed the growing influence of generative AI and autonomous systems on software development, emphasizing the need to move beyond experimentation towards structured, reliable, and engineering-driven AI-native workflows.

The programme featured a keynote address by **Mr. Nuwan Senaratna**, Computer Scientist, Investor, and Consultant, who shared insights on the future of software engineering in an increasingly AI-driven world. The conclave also hosted a series of expert presentations from industry leaders representing organizations including **99x, EWIS Group, Dialog Axiata PLC, WSO2, and Synopsis**. These sessions explored topics such as AI-assisted development, software modernization, enterprise AI adoption, agentic systems, and responsible AI engineering practices.

A key highlight of the event was the panel discussion moderated by **Dr. Ruvan Weerasinghe**, featuring **Mr. Nuwan Senaratna, Dr. Srinath Perera, Dr. Sankalpa Gamwarige, and Mr. Rukshan Jayaratna**. The discussion provided diverse perspectives on the opportunities, challenges, and future directions of AI-native software engineering, while emphasizing the importance of maintaining engineering rigor, governance, and ethical responsibility.

Beyond the technical sessions, the conclave provided valuable opportunities for networking, knowledge sharing, and collaboration among academics, researchers, students, and industry professionals. The event reaffirmed the importance of strengthening connections between research and practice to address emerging challenges and opportunities in the rapidly evolving technology landscape.

The iCIIT Conclave 2026 successfully facilitated meaningful discussions on the future of software engineering and the role of AI in shaping the next generation of digital solutions. The organizing committee extends its sincere appreciation to all speakers, panelists, participants, partners, and volunteers whose contributions made the event a success. The insights and conversations generated throughout the conclave will continue to inspire research, innovation, and collaboration in the years ahead.

## Message from the Chair of iCIIT Conclave 2026



**Dr. Ruwan Weerasinghe**

The iCIIT Conclave is intended to create a meaningful space for researchers, industry practitioners, educators, and future technology leaders to deliberate on emerging developments that are poised to reshape the digital ecosystem. This year's theme, "From Vibe Coding to Agentic Engineering" addresses an especially timely issue. In a world where the practice of coding is changing rapidly, AI-enabled and increasingly autonomous engineering approaches are expanding what applications, products, and services may be achievable in the year ahead. Understanding this shift - its possibilities, limitations, and implications - is essential for all of us.

The Conclave offers industry an opportunity to share the practices, tools, and challenges that are evolving in real time, while giving academia valuable perspectives for reflecting on how curricula, research priorities, and learning experiences must adapt. The exchange between these communities is vital: industry can help ground our discussions in practical reality, and academia can contribute critical thinking, foundational knowledge, and a long-term perspective on responsible innovation.

As we engage with the presentations and, in particular, the panel discussion with industry thought-leaders, I invite every participant to identify two or three concrete actions they will take as a result of today's deliberations - whether in their organisations, classrooms, research agendas, or personal professional practice. I also encourage all stakeholders to contribute to our crowd-sourcing of the next cutting-edge topic for the iCIIT Conclave 2027. Together, let us ensure that this platform continues to anticipate the conversations that matter most for the future of technology.

**Dr. Ruwan Weerasinghe**  
Conclave Chair  
Dean of Research  
Informatics Institute of Technology

# SYNOPSIS

iCIIT Conclave 2026

**From Vibe Coding to Agentic Engineering:**  
Establishing Rigor in Ai-Native Workflows

# AI Copilot for ERP: Agentic Code Generation Across Middleware & UI

\*Samudra Nayanakanta Kananke Arachchi

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Enterprise ERP systems remain among the most complex software environments, combining legacy infrastructure, intricate business workflows, and fragmented integration layers. This synopsis introduces a next-generation AI-powered code-generation copilot designed specifically for ERP middleware and UI platforms, leveraging agentic AI architectures to transform how enterprise applications are built and maintained.

The proposed system reimagines the AI Development Lifecycle (AI-DLC) by embedding intelligent agents across every stage—from requirement interpretation to deployment. Instead of relying on manual coding and static pipelines, the copilot orchestrates a collaborative network of AI agents capable of understanding business processes, generating integration logic, designing user interfaces, and continuously refining outputs through feedback loops.

This work demonstrates how natural language and structured ERP specifications can be transformed into executable middleware services, APIs, and UI components. It further explores multi-agent collaboration models, where planner, developer, reviewer, and orchestrator agents interact to deliver production-ready solutions. By integrating modern orchestration frameworks, the approach enables the transformation of legacy ERP workflows into scalable, agent-driven systems.

A key contribution of this study is the introduction of AI-DLC as a new development paradigm, embedding artificial intelligence across design, development, testing, and optimization phases. This significantly reduces delivery time and system complexity while improving adaptability.

The system incorporates several innovations, including domain-aware code generation tailored to ERP schemas, end-to-end automation across middleware and UI layers, and self-improving capabilities through feedback-driven learning loops. It also provides mechanisms to bridge legacy systems with modern architectures seamlessly.

This synopsis offers a practical blueprint for developing agentic AI copilot platforms and presents strategies to accelerate ERP development by 5–10 times. It also highlights real-world patterns for integrating AI into complex enterprise ecosystems, providing valuable insights for researchers and practitioners seeking to modernize enterprise workflows.

**Keywords:** Agentic AI, Code Generation, ERP Systems, Middleware, UI Automation

# EWIS AEGIS: An Intelligent Platform for Automated Legacy Software Modernization

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Enterprise organisations worldwide continue to operate critical business functions on legacy software systems - applications built five to twenty or more years ago that are expensive to maintain, difficult to scale, and constructed on obsolete technology stacks. Replacing or rewriting these systems through conventional means is typically slow, requiring months to years of effort; costly, demanding large and specialised engineering teams; and risky, as decades of accumulated business logic may be lost or misinterpreted during manual translation. These challenges constitute a significant barrier to digital transformation across sectors including financial services, healthcare, government, and manufacturing.

EWIS AEGIS is an intelligent, self-hosted platform designed to eliminate these barriers by automating the legacy modernisation process end-to-end. The platform guides users through a structured five-step workflow: uploading legacy source files or connecting a repository; defining the target technology stack and business preferences; generating a comprehensive migration blueprint through deep application analysis; reviewing and executing the automated transformation; and downloading the complete, production-ready modernized application alongside a professional upgrade report.

The platform's core capabilities include intelligent application analysis that comprehensively maps architecture, business logic, data structures, and integration points prior to any transformation; automated code generation that handles cross-component dependencies and platform-specific patterns; built-in self-correcting quality assurance that retries and recovers failed components and performs a consistency validation pass across the entire output; a full audit trail documenting every change from the original to the modernised system; and a centralised multi-project dashboard enabling teams to manage and track multiple modernisation initiatives simultaneously.

EWIS AEGIS is deployed as a self-hosted solution, ensuring that source code and sensitive business data never leave the customer's own infrastructure - a critical requirement for compliance with data privacy and security regulations in enterprise environments. The platform reduces transformation timelines from months to days, eliminates the need for large specialised teams, and provides complete traceability throughout the process. By turning one of the most expensive and risky challenges in enterprise IT - legacy system modernization - into a structured, automated, and transparent operation, EWIS AEGIS enables organisations to reduce technical debt, lower cost, and accelerate their digital transformation initiatives.

**Keywords:** automated code transformation, digital transformation, enterprise software, legacy modernisation, technical debt reduction

## Custom MCP for AI-Native Software Development and Agentic Engineering

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The CRM & Billing IT Division of Dialog Axiata PLC has developed a **custom Model Context Protocol (MCP)** to automate and accelerate the software development lifecycle using **GenAI** and modern cloud-native tools. The MCP integrates **OpenSearch, Sonar, Amazon EKS, Bedrock Knowledgebase, Jira, and Confluence**, all connected through the organization's Git repository. These systems are further linked with **Amazon Q CLI** and **Kiro IDE**, enabling developers to streamline coding, testing, and deployment while ensuring adherence to organizational standards.

The platform introduces specialized agents to support both technical and business functions. A **Business Analyst (BA) agent** automates **BRD and FRS generation** and provides **effort estimation for brownfield and greenfield projects**, reducing manual effort and improving accuracy. A **code review agent** performs diff analysis against the Bedrock Knowledgebase guidelines, ensuring compliance and saving valuable time for tech leads and architects.

Sonar issues are resolved directly through the MCP, eliminating repetitive tasks and improving productivity. Furthermore, the MCP extends automation to **L1, L2, L3, and L4 ticket resolution**, enhancing operational efficiency across support layers. By consolidating these capabilities, the MCP enforces governance, accelerates delivery, and demonstrates how enterprise IT divisions can establish rigor in **AI-native workflows**. This case study highlights the practical application of **Agentic Engineering**, ensuring reliability, maintainability, and structured pipelines for AI-assisted software development.

**Keywords:** Agentic Engineering, Amazon Q CLI, Business Analysis, Code Review, Custom MCP.

# The Agentic SDLC: Building Software With Agents

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Agentic coding tools have dramatically accelerated code production, yet in enterprise settings their gains are blunted by everything that surrounds the code: architectural conformance, third-party dependencies, authorization and identity, API management, observability, security, and compliance. These complexities keep non-technical owners out of enterprise application development, even with coding agents at hand. This talk presents a way of solving that problem with an agentic engineering platform.

The talk introduces WSO2 Agentic Engineer, an open-source project from WSO2 that reimagines the SDLC as an agent-driven process with humans in the loop. Still an experimental project, it is built on OpenChoreo - a CNCF-donated, Kubernetes-based developer platform that natively provides API management, identity, deployment, observability, and policy enforcement. This lets agents build on a solid foundation rather than re-implementing it.

Development begins with a business owner expressing intent in natural language. A chat agent elicits requirements, which are refined into specifications, wireframes, and architecture in a shared workspace, then carried through to generated code, APIs, and deployed services. The chain is Git- and GitHub-native, so engineers can inspect or intervene at any stage using familiar tools.

Multiple agents work together across different parts of the SDLC. Each is equipped with skills suited to its role, and those skills capture the solutions to the enterprise complexities described above. The system also includes feedback loops that help agents self-correct and troubleshoot - for example, errors in runtime logs trigger agents to fix the underlying issues. All agents are coordinated through the WSO2 Agent Manager, allowing them to be governed according to organizational needs.

Early results suggest that pairing specialized agents with a platform that automatically enforces enterprise concerns is a promising path from "vibe coding" toward production-quality agentic engineering. The project is open source at [github.com/wso2/labs-agentic-engineer](https://github.com/wso2/labs-agentic-engineer).

**Keywords:** Agents, Software Engineering, Vibe Coding, Spec Driven Development

# ATLAS - Adaptive Tool Library and Agentic System: Tool Management for Autonomous Coding Agents

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Large Language Model (LLM)-based coding agents have demonstrated strong capabilities in automated software development tasks such as code generation, debugging, and repository analysis. However, most existing systems operate in a stateless manner, repeatedly regenerating the same capabilities for similar tasks without preserving prior knowledge or reusable solutions. This limitation leads to computational inefficiency, inconsistent outputs, and the inability to continuously improve over time.

This research focuses on adaptive tool management for autonomous coding agents through the development of a persistent and reusable tool ecosystem. The study investigates how coding agents can automatically identify reusable components from previously generated solutions, transform them into modular tools, and organize them within an evolving tool library. The proposed approach emphasizes four key areas: automatic tool synthesis, semantic indexing of tools, adaptive tool retrieval and selection, and continuous tool evolution based on usage patterns and feedback.

The research aims to transform coding agents from stateless generators into stateful, continuously learning systems capable of reusing and refining capabilities across multiple tasks and sessions. By enabling persistent tool reuse and adaptive capability management, the proposed framework seeks to improve reasoning quality, task efficiency, scalability, and long-term learning in AI-driven software engineering environments. This work contributes to the fields of autonomous software engineering, adaptive AI systems, and intelligent agent architectures, while advancing the development of more efficient and engineer-like LLM-based coding agents.

**Keywords:** adaptive tool management, agentic systems, autonomous coding agents, large language models, tool synthesis



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