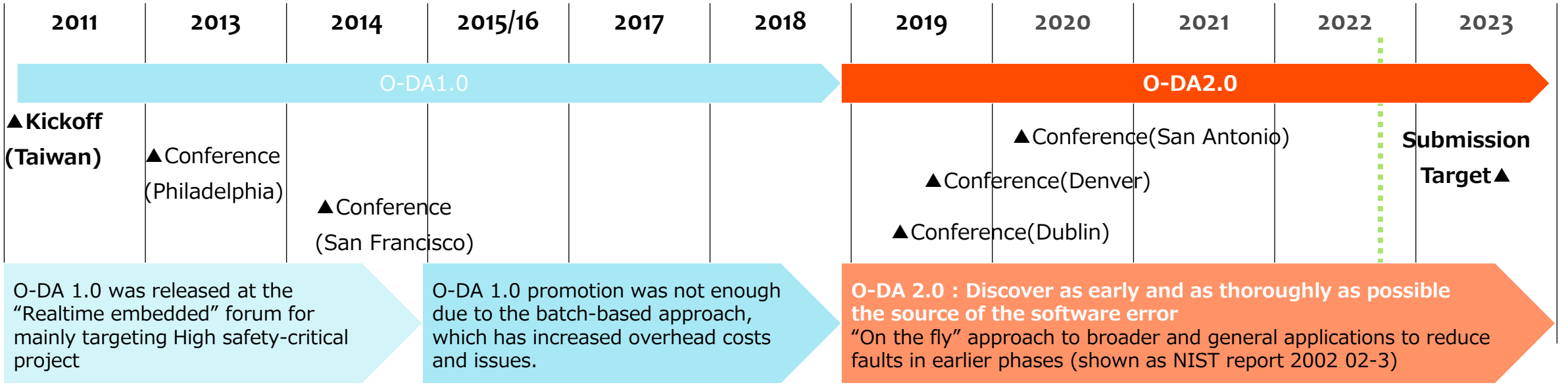
O-DA 1.0 to 2.0

Japan Open Group's Challenge

Open Dependability through Assuredness™

History

Due to COVID-19, our Japan WG team's (local) participation in the Open Group's quarterly standardization meetings has not been possible for a while since the last meeting in Q1 2020 (San Antonio, USA, theme: Making Data Useful). The quarterly formal meetings have been 100% virtual for the past few years, not F2F. Tried a mixed model of F2F and Virtual, but the trade-off between staff workload and customer cost did not work out, and in the end, the F2F meeting did not take place for 33 months. Our Japan WG team, who had planned to attend the F2F meeting when it resumed, had to wait a long time. In the meantime, the themes of the Open Group quarterly meetings were the Digital First/Full Virtual conference, the Hybrid conference, the Digital Transformation, Digital Science, TOGAF® ArchiMate® and Agility collaborations on industry standards, and the government EA.

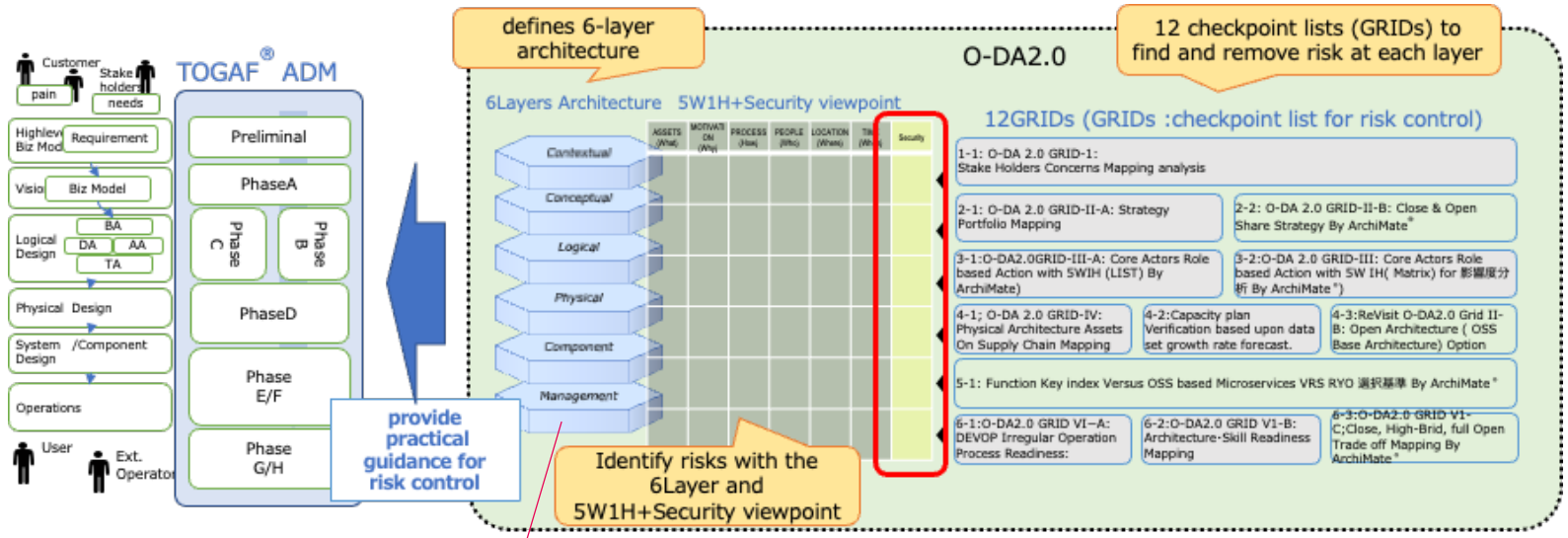


WG members

COVID-19 has cast a heavy shadow over the O-DA2.0 WG. In Japan, WG Leader Yoshio Kawakami retired from TATA and passed the baton to Kyndryl Japan's Kyoichi Matsuzawa. Nevertheless, we continue reestablishing the core concept of O-DA and discussing issues through monthly plenary meetings. It must have been somewhat challenging to keep improving the morale of coordinator Advisor Kawano, leader Matsuzawa, and volunteer members from companies, universities, and other member companies to challenge intellectual interest and quality improvement. Still, there is a sense that we are gradually achieving results.

Because of COVID-19, We could not be traveling abroad for about two and a half years, and now I would like to give an interim report at the Open Group's standards conference, as the O-DA2.0 team, to be held in mid-October, Edinburgh, for the fourth update in total, by the end of this year. So we have applied for the Edinburgh Open Conference for mid-October.
Ten Japanese members, including the new leader Kyndryl, four board members Fujitsu x4, Kyoto University, Rococo x2, LTSx2, and Re-GISx2, will attend the Edinburgh Open Conference. On October 19, we will have 40 minutes to give an interim report on O-DA2.0 at the Day3 "Open Standards" track1. I think the Open Group will probably have two of its four annual conferences next year as F2F and two more as Full Virtual, and the guest speaker will probably be a virtual/F2F hybrid.

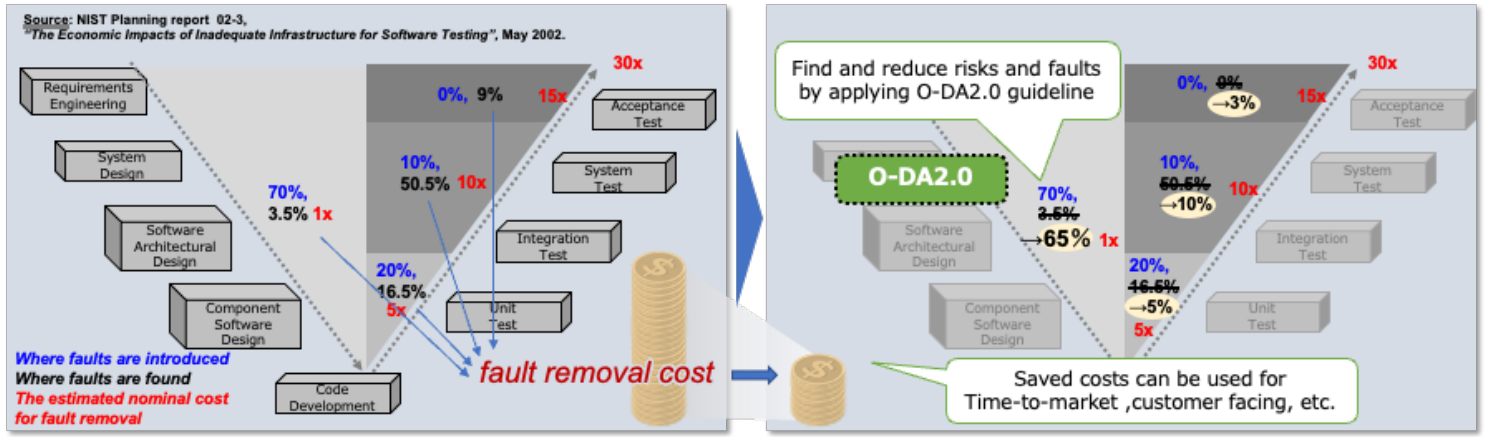
Core Concept



In O-DA2.0, the six stratifications (1: Contextual; 2: Conceptual; 3: Logical; 4: Physical; 5: Componental; 6: Operational) corresponding to the EA design process in ADM, such as Preliminary, Architecture Vision, Business, etc., are designed in six layers of D2C (Detect 2 Correct at IT4IT) for each layer; Each of the 6 Stratifications is verified on the viewpoints using the 5W1H and security for each layer. In response to a 2002 paper by NIST, which pointed out that the biggest problem is that designers detect only 3.5% out of 70% of software design errors during the design phase. We have developed O-DA2.0, a new approach that uses a verification process with 5W1H and security for each layer to promote early detection and elimination of system design errors. O-DA2.0 aims to encourage early detection of errors with 12 GRIDs (checkpoints) based on the correct guidance points up to 63.5%(the maximum value we expect) against 70%. In addition, while maximizing the added value in TOGAF®'s Value Stream through O-DA2.0, we are trying to pursue the possibility of D2C realization by using the security measures that aim at it with Zero Trust. We are discussing this theme through monthly web meetings and have recently been collaborating with the Security WG, who designed the ZTA's 11th Commandment.

See Figure below. According to a 2002 National Institute of Standards and Technology (NIST) paper, 70% of software errors are "loaded" in the design phase before Unit Test. And are caused by "design ambiguity," "obvious logic errors," inconsistencies due to "5W1H checking with customer field managers", simple oversights, inadvertent errors, inadvertent errors, and inadvertent errors. Additionally, even though Detect2Correct would have cost x1 or less before Unit Test, only 3.5% of failures were discovered. The TOGAF® ADM uses the EA framework to identify errors in all architectural phases, Architecture Vision, Business Architecture, Application, Data Architecture, and detailed design up to Phase-E. And identify errors in Enabling Opportunity & Risk management phase. We are defining the 12GRIDs to cover and identify erroneous and incomplete definitions that need to be verified. In addition, by applying the Security Grids incl. ZTA the enterprise architect can validate the design "As Early As Possible and As Much As Possible" in the design phase. Since “The Data will show perfection”, I believe that the goal, for now, is to find up to 63.5%, which is a "perfect score" in the "British way" (Francis Bacon way; inductive rule of thumb). If this happens, at least the enterprise can cut a 60% reduction in IT costs and Time2Market (time to Go-Live) in half, and the application can generate more value. Assuming that the application can create a profit of 10 billion yen per year, 5 billion yen can provide the company with a net profit within the fiscal year, which can significantly reduce the cost of testing.

How to remove failures



Changes from 1.0 to 2.0

O-DA1.0 was the method of assuming verification by a third party other than the parties concerned to challenge Risk ZERO of human life, under the government's guidance. At that time, the London CIty University and other institutions were studying and practicing risk analysis methods using CASE. Robin Bloomfield is distinguished for his leadership as Professor of Systems and Software Dependability at the Center for Software Reliability, City University of London. For the past 30 years, his work in safety and security has combined policy development, technical consulting, and basic research. Other participants in these activities included Tim kelly from York University and David Jackson from MIT.
The third-party organization (Audit) style O-DA1.0 is a batch method (additional verification method); thus, the verification cost is doubled, resulting in cost and morale problems in the field. As EA spreads nowadays, the practice of open transformation based on an open platform using TOGAF® and the Shared Service Level is exactly what TOGAF® 's Reusable BB (guaranteed reusable object module) reuse rate to increase yearly. Therefore, if the in-line GRIDs verification provided by O-DA2.0 for each of the six layers of design against the EA framework standard from the vendor's proposal stage, rather than the batch assurance process of O-DA1.0, is promoted, the utilization of those RBBs will increase. Since the overall reliability increases power-wise as its utilization rate exceeds 50%, we believe it is essential to solemnly proceed with standardizing EA's in-line verification design (O-DA2.0).

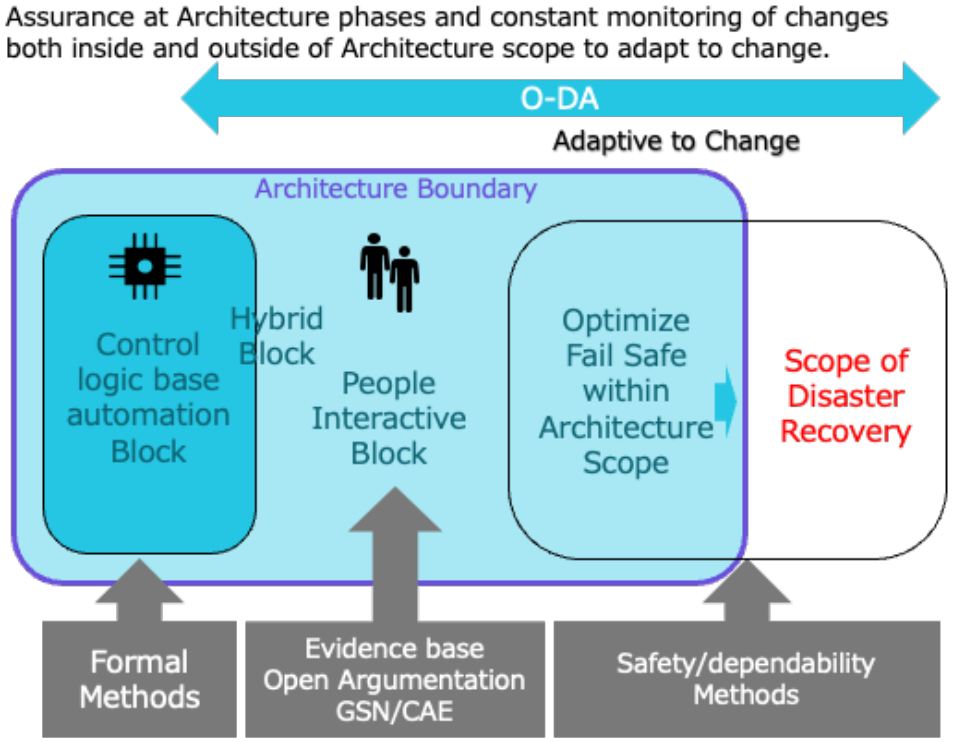
Robin Bloomfield(CAE)
City College of London.

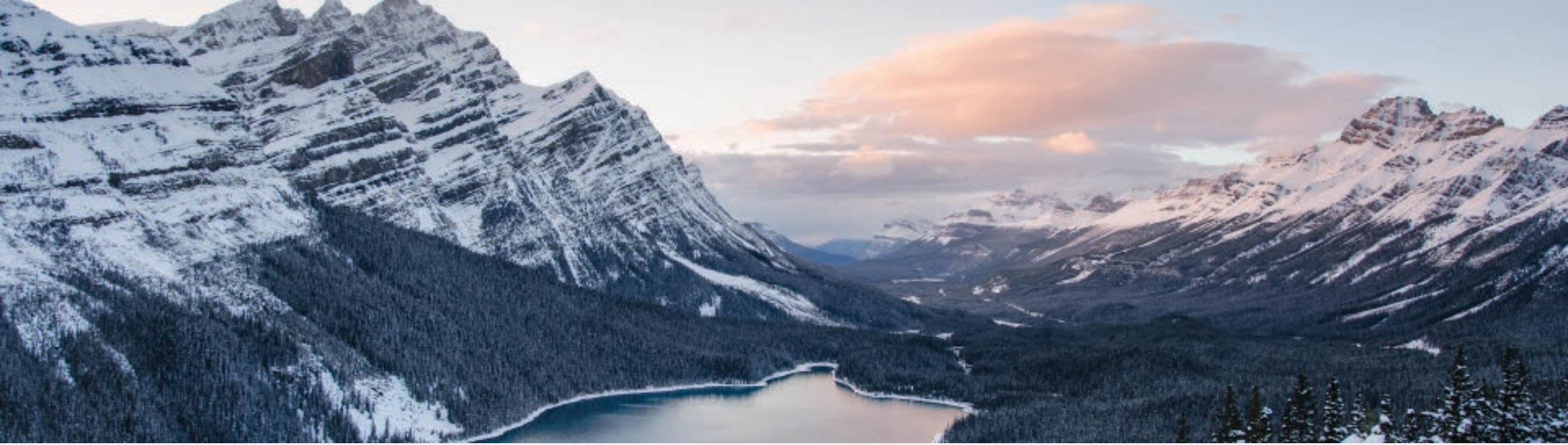
Tim Kelly,(GSN)
York Univ.

David Jackson ;
MIT Alloy

Adapt to change with O-DA

The occurrence of Error It indicates that the effect of prevention is significant and that there are four different goals among them. Dependability Through Assuredness is the leftmost logical block in formal language. The rightmost block on safety includes nuclear power, space, aviation, and railroads, the typical case for each specialty, and disaster prevention and mitigation management, even in the case of natural disasters such as earthquakes and tsunamis in the red. The most challenging case is that there is no pattern in the comings and goings of people or things. And the idea that absolute monitoring of the behavior of individual devices and people and changes in events is necessary to protect the data and principles from being saved is a familiar concept with ZTA. O-DA 1.0 is highly effective in preventing errors because it develops highly critical applications. However, 2.0 uses the 12 GRIDs (Guides for Error Detection and Correction) in the TOGAF® ADM process as a BB and open data to check and improve the results. We believe that by reviewing and enhancing the data, we can get on the GRIDs improvement (CR) process and continuously develop. This way, the Viewpoint Improvement Circuit (Change Request Process) will be governed and active. Moreover, as it is reused, great productivity is ensured power-wise.





Thank you

Junkyo (Jack) Fujieda
Kyoichi (Ken) Matsuzawa
Japan Open group WG