UniPhi

Independent Review and Verification

UniPhi's unique capabilities applied to independent verification of major infrastructure and construction projects

Small teams, large projects means innovative software a must for success

UniPhi was first used to support the role of independent verification in 2009 on the construction of the Melbourne desalination plant. The fantastic thing about this project was that the joint venture team from Davis Langdon and MWH were prepared to invest time in the re-design of processes and definition of keys for success.

A UniPhi consultant, Jason Cross-Martin spent

two weeks sitting with the team at the start of the project workshopping key processes and getting a deep understanding of the requirements. Once documented, the UniPhi software team were able to tweak key modules; Issues and Documents with changes that allowed the JV end users to manage change over time without further code changes.

UniPhi managing director Mark Heat says "The

ultimate goal was for a simple and flexible system that allowed for changing requirements as the project progressed." UniPhi expanded the project custom fields capability adding a checklist and custom list methodology tab that allows end users to build their own lists to include in on-line forms through the UniPhi template system .

"The UniPhi template system is the most unique piece of software in the broad UniPhi features set and the custom lists expansion added real power to on-site data capture" Heath said.

Over the next 6 years, the system has evolved further to provide an end - to end paperless product set for independent verification and project management superintendent roles.
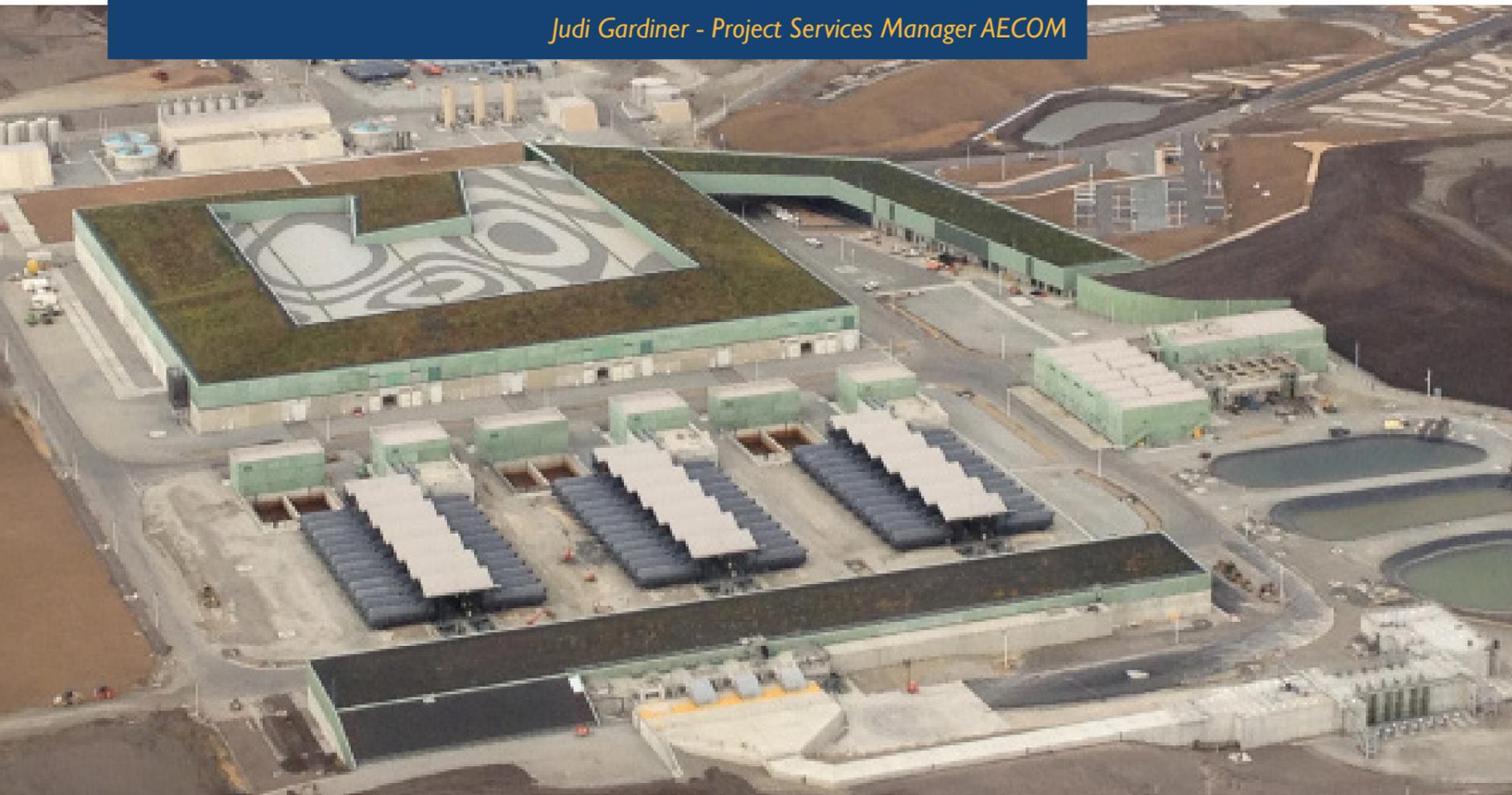
The most significant of these new features are

the native apps for Android and iPad that allows engineers and project managers to conduct surveillances in the field and have their surveillance record captured instantly on the spot. The removal of the traditional cumbersome process of taking site photos and transferring these to a share drive in the site office after the surveillance while scanning a hardcopy surveillance note sheet is a real winner with end users.

Added to this the capability of linking the site photos with the record in the one document that has full text indexing applied as well as filtering for options selected within the document (for checklists and drop down lists). This means senior managers on the job have real and transparent oversight as they can filter for all hold points for example and then filter those down further for those hold points relating to bridges or culverts etc.

> We no longer need to search through multiple personal inboxes, sent items, deleted items etc. Instead we go straight into UniPhi and find out exactly what is happening within each project and activity subset.
>
> *Judi Gardiner - Project Services Manager AECOM*

" *The ultimate goal was for a simple and flexible system that allowed for changing requirements as the project progressed* "

Multiple pieces of software integrated to provide all stakeholders the information they need.

The following pieces of hardware and software is used to successfully support the independent verification process:

- Mobile devices (either phones or tablets)
- PCs
- GPS tracking software (built into phones)
- MS Outlook email client
- UniPhi OnSite mobile software
- UniPhi web application
- UniPhi Outlook plugin

All of these pieces of harware and software are stiched together via web services that allows data to be keyed once and used across the platform.

A typical workflow would look like this:

1) The UniPhi core database is configured through the web application to match the activities that the managing contractor is going to complete.

2) Templates, custom lists and checklists are created in the UniPhi web applications methodology module. Most of these templates are OnSite compatible which means that engineers are able to capture the information through the UniPhi OnSite mobile app directly in the field. The native apps work in offline mode so even if internet connectivtiy is poor, the data can be captured and then synchronised when connectivity is restored.

3) Emails are received by the document controller relating to all aspects of work on the project and are logged directly into the UniPhi database via the UniPhi outlook plugin installed on the document controllers PC.

These emails are assigned to engineers for either design review or construction review and contain links directly to the managing contractors document control system

4) The enginneer logs into the UniPhi web application and uses the My Work module to see what work they have to review. Clicking on the link takes them to the email containing the scope of work and a link to the unerlying document control system with drawings and other information

5) For construction surveillances, the engineer takes photos within the OnSite app which strips the Geo Tag information from the photo and displays this along with the meta data filled in by the Enginner (e.g. is this a Hold or Witness Point, the type of surveillance, the weather, who was in attendance etc).

6) If there is a non-conformance issue, this is logged directly into the document but also updates the issue in the UniPhi database allowing for subsequent communication to be appended to the issue as it is resovled.

7) Client reports are dynamically created from the information stored in the surveillance records, significantly reducing the admin burden in head office.
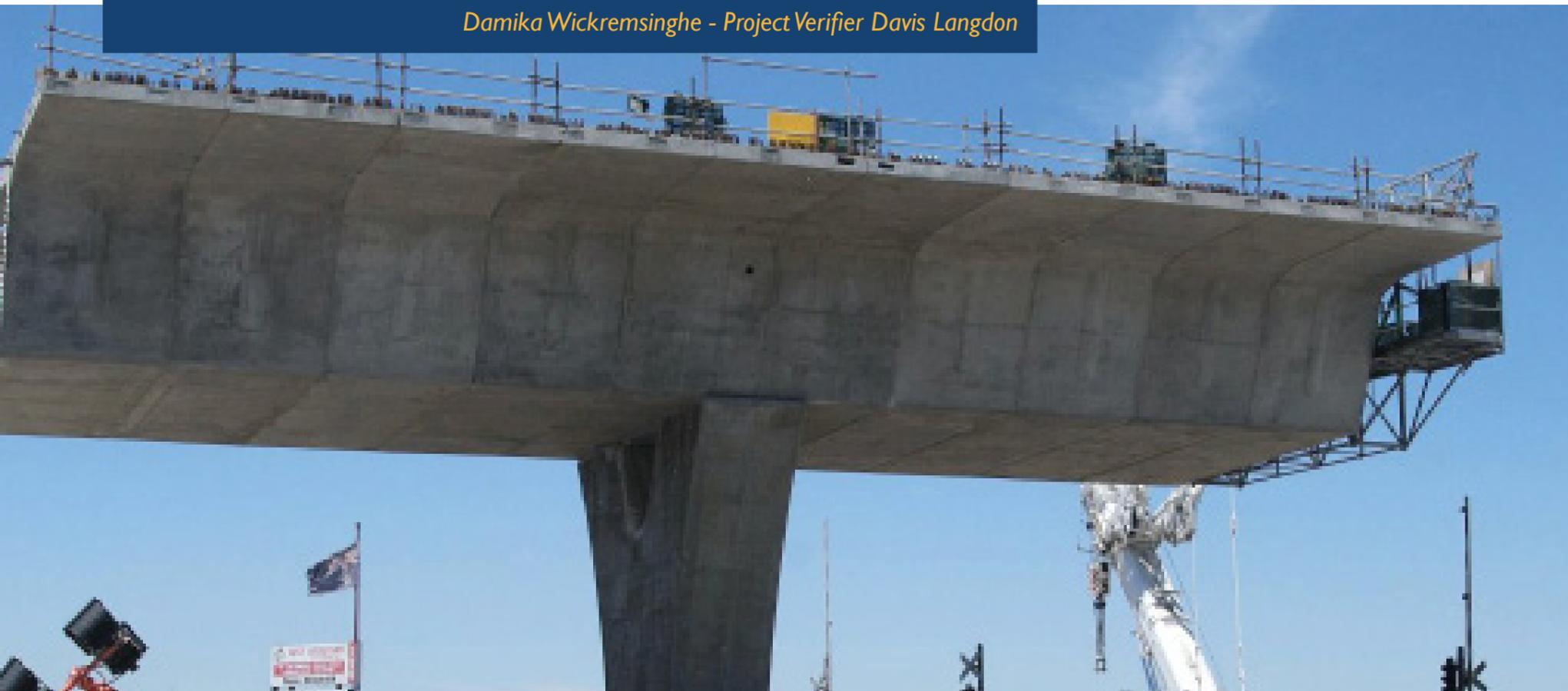
> To streamline the surveillance record input and to reduce double handling of site records a mobile OnSite app was developed and is compatible to android and apple devices. The OnSite application can be configured by each organisation to accomplish the reporting needs of that project.
>
> *Damika Wickremsinghe - Project Verifier Davis Langdon*

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> *UniPhi takes workflow to a more practical level and creates transparency in documentation and records management that makes auditing business processes simple and efficient.*
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Future developments ensuring that the IR role is ever improving

A system is never perfect and after having evolved the UniPhi product for 13 years and 12 major releases no one knows this more than us. The key to moving ever close to perfection is the constant feedback of our generous and supportive clients.

The independent verifier configuration has some exciting new developments to come that will streamline work-flow further. The most significant

of these from an efficiency standpoint is the development of integration with key document control systems. Most of the infrastructure projects requiring independent verification will use either Team Binder, Aconex or Incite to share large files and manage work-flow.

Currently, notifications are received via email when a new document or documents are available

for download. These are saved into the UniPhi database via the MS Outlook plug-in. However, once information is collated either via design review comments or surveillance records, these then need to be manually rendered to PDF and uploaded to the document control system to report back.

UniPhi 13 will look to add integration with these system utilising our own existing REST API and the APIs offered within the document control platforms. The use of web services is such a rapidly evolving and useful thing that we see these sorts of solutions becoming critical for "unifying" software like ours. We're sure the document controllers on these projects will agree!
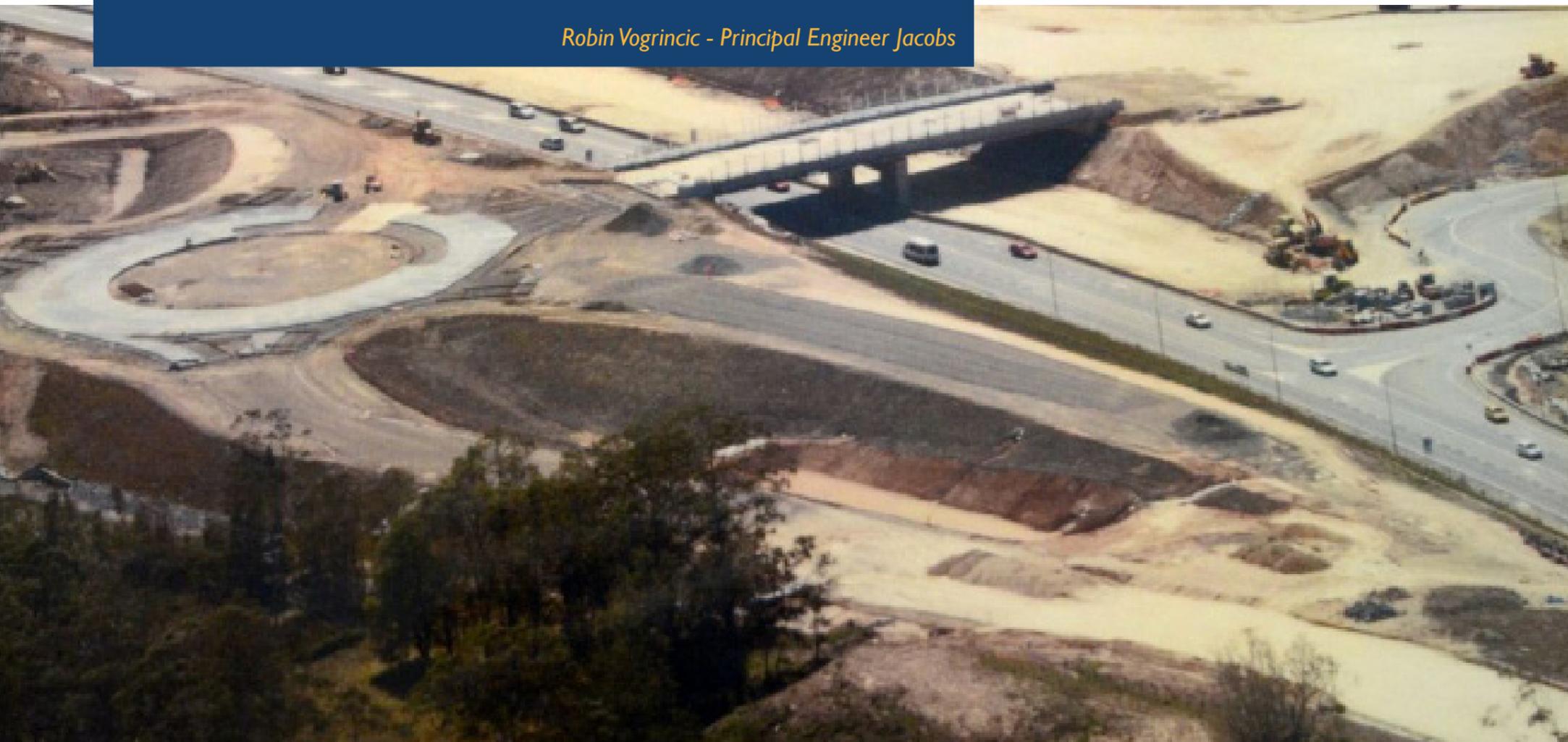
Another more nuanced development for IR roles is the use of the risks module to quantify the risk in the surveillance activity and then strategically deciding the level of surveillance required.

By using UniPhi's risk management module, the IR can integrate this decision making with the actual surveillance so that custom inquiries as to why only limited surveillances were carried out or why more were can be responded to in seconds with a detailed risk mitigation response.

This idea was developed by long term user Judi Gardiner and we think it is a fantastic. We look forward to working with her on implementing the configuration on their next project.

> UniPhi's direct link to MS Outlook through a customised 'Save as Issue' icon allowed the capture, tagging and storage of all incoming contractual emails. The work flow system allowed leaders to electronically direct tasks to team members with priority ratings and response deadlines.
>
> *Robin Vogrincic - Principal Engineer Jacobs*

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The paperless and integrated system offered by UniPhi reduced the administration load allowing us to focus on managing our surveillance activtiy

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