



# Final report

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## eNVD Integration to TPICS2

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## **Abstract**

The eNVD Integration Project aimed to modernise the meat industry by integrating the Electronic National Vendor Declaration (eNVD) database with the Thorsys Production and Inventory Control System v2 (TPICS2), enhancing TPICS2's data utilisation. This initiative targeted the elimination of outdated paper-based processes and the improvement of operational efficiency and traceability. Employing a background task, the eNVD API is queried autonomously and downloads data from the eNVD database, ensuring continuous data availability without user intervention. Significant modifications to TPICS2 enabled the incorporation of this data, automating eNVD downloads, eliminating paper storage, securing legal documents, and simplifying the matching of eNVD data with on-plant systems.

The project successfully integrated the eNVD API with TPICS2, automating electronic eNVD downloads, eradicating the need for paper storage, and enhancing the security and efficiency of document management. These achievements mark a transformative step towards operational efficiency, regulatory compliance, and quality control in the meat industry. By pioneering digital transformation, the eNVD Integration Project promises long-term benefits, including improved competitiveness and sustainability for stakeholders.

## Executive summary

### Background

The eNVD platform is a suite of technologies which support end-to-end digital transfer of livestock consignments including Livestock Production Assurance (LPA) NVDs, Meat Standards Australia (MSA) Vendor declarations, national health declarations and National Feedlot Accreditation Scheme (NFAS) forms.

Processing plants are heavily reliant on the paper NVD to support their livestock operations and market eligibility checks. Through their experience, Thorsys have estimated that the time a processor takes to process one paper NVD is 14.4 minutes, costing the sector over \$13.7 million per annum. To reduce this cost and maximise opportunities for processors to leverage the eNVD data, the systems and processes within processing plants need to be assessed, digitised, upgraded and integrated.

Thorsys Australia Pty Ltd is an Australian company specialising in information technology solutions for the agribusiness information and communication technology (ICT) sector, including production control, inventory and traceability systems for the meat industry.

Thorsys is upgrading its Production Inventory Control System (TPICS2) module of its Thorsys' Abattoir System software, and this provides an opportunity to integrate eNVD web and app data more effectively and boost uptake by meat processors. The Thorsys system interfaces with the NLIS system for cattle identification, which also provides opportunities for future integration projects.

With the introduction of the eNVD app and database there was an opportunity to provide this information to processors that were running the TPICS2 system natively to the livestock staff matched to the inhouse data automatically via the NVD number.

This replaces the manual paper method of NVDs, eliminating the need for mandatory storage, and in most cases re-keying of the information into the plant system.

### Objectives

- To develop a new piece of software for automating the download of eNVD data to the TPICS 2 system that encompasses the LPA NVD, MSA Vendor Declarations, national health declarations and NFAS forms.
- Modification of TPICS2 to add a simple matching process of the downloaded data to plant data allowing for better integration between these data, the elimination of manual entry and potential errors, and the streamlining of operations.
- Modification of TPICS2 To add the display of the matched data for use by the livestock and the kill staff at the plant, reducing the time and financial costs associated with the manual processing of paper NVDs.

### Methodology

The eNVD API and its integration points were analysed within the Thorsys system to identify system enhancement requirements and user needs to ensure compatibility between the software.

Standard software development practices using Thorsys' software development tools and languages of c#, Typescript, SQL Server were employed. Autonomous data querying features in the Thorsys system were also implemented.

The test sandbox provided by ISC for safe testing of developed code against API interactions was used to ensure system stability, data integrity, and user interface usability before deployment.

### **Results/key findings**

The Download Service, a component of the eNVD Integration Project, allows for automated and periodic checks of the eNVD database for updates. Once activated, this service identifies any recent changes in the eNVD database that match relevant consignments since the last check, and downloads this specific updated information into the plant's database. This selective download process enhances the efficiency of data transfer and optimizes the use of system resources by focusing only on new or altered entries.

The eNVD was integrated within the Purchase Order Maintenance section where a list of available eNVDs can be seen and matched to purchase orders, which then becomes available in the arrivals section seen on the hardware at the yards. Livestock personnel are able to access eNVD details in the pen management system using electronic tablets.

Due to the large volume of information in the eNVD database, a search routine was developed to enable searching by key information which match desired parameters. The system will present all relevant details for the selected eNVD.

### **Benefits to industry**

This would give processors that use TPICS2 the benefits of:

- Electronic download of eNVDs allowing immediate access to pre-delivery information, improving logistics and processing efficiency.
- Transition to electronic document management stored in the plant computer system and eliminates paper storage, reduces data entry errors, eliminates lost paper NVDs in transport and provides a greater level of security of legal documents.
- Matching of eNVD data to on plant system for use along the supply chain, streamlining the reconciliation process and enhances traceability.

### **Future research and recommendations**

Modification would be required to each individual customer at implementation time and to accommodate any new enhancements to the eNVD database and app.