INTAS Project
4th Half-yearly progress summary:
October 2017 – March 2018

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Executive Summary

The Industrial and Tertiary Product Testing and Application of Standards (INTAS) project is funded by the EU's Horizon 2020 programme and aims to provide technical and cooperative support and capacity building activities to Market Surveillance Authorities (MSAs) concerned with the enforcement of Ecodesign Directive requirements for very large products. The need for INTAS arises from the difficulty that MSAs and market actors face in establishing and verifying compliance with energy performance requirements for large industrial products subject to requirements under the Ecodesign Directive. It is specifically focused on transformers and industrial fans.

The project aims to:

- support European Member State MSAs to deliver Ecodesign compliance for transformers and large fans
- support industry to fully understand their obligations under the Ecodesign Directive and to deliver compliance in a manner that will be broadly accepted by MSAs
- foster a common European approach to the delivery and verification of compliance for these products.

The project started in March 2016 and will conclude in February 2019. It involves 16 European partners, among which 11 are national MSAs or cooperating organisations and the remainder are technical partners.

This document is the fourth half-yearly status report of the INTAS project. It is intended to provide external stakeholders with a summary of the project and progress made by the project consortium within the fourth six monthly period of the project.

Within the fourth six-monthly project period the project partners have:

- Held a face to face working meeting and numerous teleconferences.
- Held meetings with the major industry associations representing the fan and transformer industries
- Maintained and extended contacts with a wide variety of relevant stakeholders (Market Surveillance Agencies, testing laboratories, accreditation authorities, standardisation bodies, product regulators, industrial and commercial actors, technical experts and NGOs)
- Continued to foster contacts with key EU market surveillance processes and related projects including presenting the latest findings to and conducting a survey of members of the Ecodesign ADCO
- Completed detailed technical work (Work Package 3) on:

- Identification and classification of product types, and the related document requirements (Task 3.1).
- Evaluation and testing – the best strategy based on product classification (Task 3.2)
- Links with other legislation –Assessment of Member State and EU-level legislation (Task 3.3)
- Building collaboration with MSAs and manufacturers – understanding how and when fans and transformers are produced, particularly looking how customised and unique products are procured and delivered (Task 3.4)
- Derivation of screening methodologies for targeting products for compliance assessment (Task 3.5)
- Derived provisional recommendations on how best to conduct market surveillance for larges fans and transformers

Building on a first phase documenting the existing compliance framework and resources available to MSAs, manufacturers and independent testing laboratories, the INTAS project just concluded its second phase in April 2018. Project partners assessed processes and methodologies by which MSAs can identify, select and evaluate large transformers and fans regarding energy performance issues. This work was conducted in collaboration with all relevant stakeholders including manufacturers, other MSAs, independent laboratories and purchasers of very large products in order to propose a methodology acceptable to all (one for fans and one for transformers). The main activities and results of this phase are summarized here.

Screening methodologies to identify products for compliance assessment

Through information exchange with market actors INTAS developed some recommendations to identify all relevant products being placed on the market. These include having producers and importers inform MSAs when an order for an industrial product destined to be installed in their jurisdiction is placed, or else having the risk of 3rd party verification pre-placing into service which will be costly for the final client. It is also proposed that MSAs should work collaboratively with customs, ports and road network operatives to be informed when products are being imported and transported. End-users (such as grid operators in the case of power transformers) could also inform the local MSA when placing orders. All identified products could be integrated in a database, from which a sampling algorithm could help select products for inspection and testing

Identification and classification of product types and related documentation requirements

INTAS has developed checklists for use by MSAs, guiding them through the inspection of product documentation provided by manufacturers to establish their compliance with Ecodesign requirements.

Evaluation of energy performance verification and testing methods

INTAS partners have conducted a concrete assessment, including testing exercises, of the methods available to MSAs to verify the energy-efficiency of fans and power transformers across the full size range, from small to very large. The methods investigated included both those already sanctioned by legislation and standards and those which are not currently recognized but could be considered in the future, or that might be useful to determine non-compliance risk to inform a decision about whether or not to conduct a legally binding assessment. They also correspond to varying levels of MSA resource commitments and inconvenience to manufacturers and end-users, which scale with the size of products being verified:

- documentation (visual) inspections of nameplates and technical documentation, applicable to all products
- independent laboratory testing, especially for medium sized products according to the scope of the relevant regulations for transformers and fans
- evaluation of testing done at the manufacturer factory's laboratory via witness testing performed by a MSA in cases where testing by independent laboratory measurement equipment is not feasible. To minimise disruption to the manufacturer's operations witness testing by the MSA could be carried out at the same time as a Factory Acceptance Test, routinely performed by manufacturers at the demand of the customer (for large products – especially transformers)
- on-site testing making use of mobile laboratory equipment to make tests at manufacturer premises and also in-situ testing at the place of product installation. These options were considered for very large products or in the case where the transportation of the product to a 3rd party laboratory is impractical
- additional methods considered for fans only, comprising: energy performance estimation and modelling based on design engineering and computer simulations; scale-model and reduced speed testing as a basis for documenting and verifying large products; evaluating the manufacturer's quality assurance systems with regard to the aspects that concern the ability to comply with Ecodesign requirements for fans; a product-in-product approach for motors as a component within the fan that are in any case subject to Ecodesign requirements.

These methods were evaluated by INTAS partners through the conduct of testing exercises on a significant number of power transformers and large fans conducted across many locations in Europe and the findings, which are confidential to the project were reported to the INTAS partners.

Evaluation of the potential for multiple regulation testing:

All product categories subjected to Ecodesign requirements are also covered by other regulations in the topics of Energy, Safety, Workplace and Environment. INTAS examined 19 relevant EU Directives, 12 EU regulations, 6 national legislations and 8 voluntary certification schemes to assess possibilities to conduct

joint market surveillance actions alongside Ecodesign testing. The main incentive is that multiple regulation testing would make market surveillance more resource-efficient. Unfortunately, the INTAS evaluation concluded that no real options exist to do multiple regulation testing for either fans or power transformers. It was, however, found that relatively simple tasks such as document inspections and visual inspections of rating plates could be delegated to other official bodies in charge of controls in contexts where a control is conducted when a large industrial product is being installed.

Draft market surveillance guide

Taking all these results into account, the INTAS project prepared flowcharts to guide the improved market surveillance of large fans and power transformers.

Project description, participants and advisory board

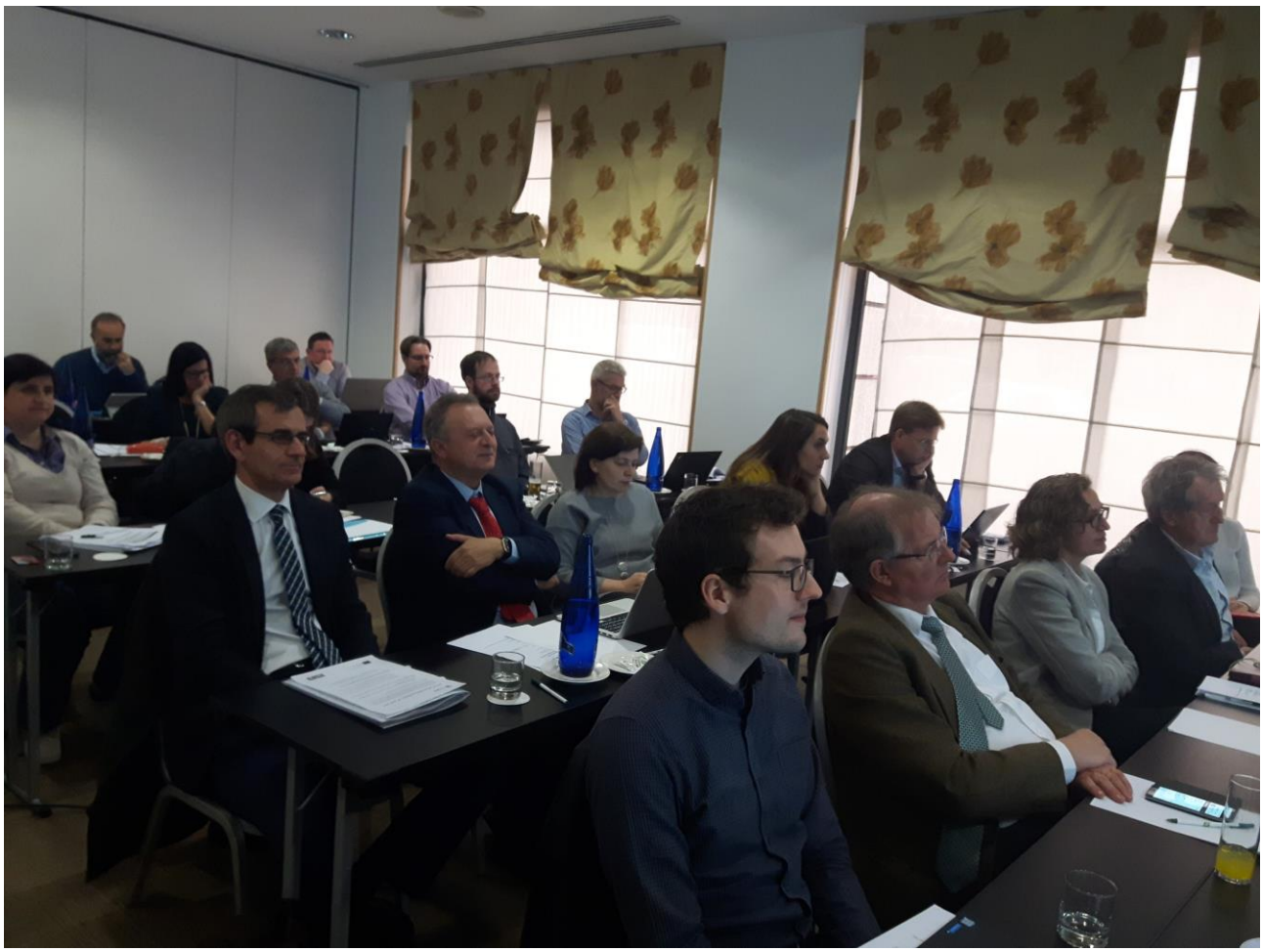
Details of the INTAS project workplan, participants and advisory board are reported in Appendix A.

1. Project progress: October 2017 - March 2018

1.1 Progress with Work Package 1: Management and coordination

1.1.1 Project meetings

Following the 3rd Technical Progress meeting held in Copenhagen on October 5th & 6th, 2017 a fourth meeting was held on 9-10th April in Madrid. This meeting focused on the findings from work package 3 that laid out the building blocks for the development of INTAS methodologies for market surveillance for large industrial fans and large power transformers and planning for work package 4 under which the draft methodologies are to be tested in pilot programmes.



1.2 Progress with Work Package 2: Landscape of testing avenues

Work Package 2 was the first technical task to get underway. The activities were described in detail in the 2nd 6-monthly report and the work package deliverables were completed in the 3rd 6-monthly period as reported in the previous progress report.

The following public deliverables are available on the project website:

- Database and report on EN/IEC/ISO technical standards - Report (ZIP file, with spreadsheets)
- Database and report on EN/IEC/ISO technical standards - Annex A: Power transformers
- Database and report on EN/IEC/ISO technical standards - Annex B: Large fans
- Worldwide and EU current practices in market surveillance (D2.6 WP 2.5) - INTAS / ENEA report

In addition, the following confidential deliverables have been produced for the use of the project consortium:

- Data base of EU laboratories
- Report on laboratory selection process
- Report on accreditation possibilities
- Report on commercial practices.

1.3 Progress with Work Package 3: Defining an effective compliance framework for MSAs and manufacturers

Work Package 3 establishes the elements to define an effective market surveillance approach for large industrial fans and large transformers and builds strongly on the work undertaken in WP 2. It began in December 2016 and concluded in April 2018.

1.3.1 Summary of approach to the activities to be conducted

The purpose of this work package is to define the process and methodology by which market surveillance authorities (MSAs) can identify, select, and evaluate large, industrial products. The work package is divided into interconnected tasks that are each essential for effective testing and evaluation of compliance. These tasks form a workflow that simplifies and streamlines market surveillance activities.

1.3.2 Progress with task activities and deliverables

1.3.2.1 Task 3.1 – Information requirements and documentation inspection

This task was concerned with the analysis of the product information requirements at both the point of sale and upon request by national market surveillance authorities. it necessitated the establishment of a thorough process to identify the products within scope of the regulations as a precursor to be able to undertake market surveillance. In addition to the collection of this information on actual products, it has a secondary goal of producing a check-list document for both product groups. This entailed a degree of elaboration of the current Ecodesign Directive regulations which have a number of ambiguities.

The Task 3.1 report for fans was finalised in April 2017 and contains the following sections:

- Introduction and objectives
- A guide on product categorization to assist MSAs to identify fan types & casings as defined in the regulation 327/2011
- A checklist for documentation control – elaborated compared to the existing regulation.

The product categorization and checklist will be included in the final work package to evaluate the methodologies (see Work Package 4), but also serve as the basis of the Task 3.2 work to evaluate the product's energy performance. The checklist was applied, refined and validated with the assistance of other partners involved in the testing activities of Task 3.2 (see next section).

The Task 3.1 report for power transformers was also concluded in the 6 monthly project period and will be presented at the national focal point meetings to be held in the 5th six monthly project period.

The Task 3.1 project deliverables on information requirements and documentation for fans and transformers are confidential for the use of the project consortium; however, the checklists will be further applied (and refined as necessary) to assist the real market surveillance pilot studies in Task 4.1 and Task 4.2 before being included in the final public project outcomes.

1.3.2.2 Task 3.2 – Evaluation of product's energy performance

This sub-task entailed the testing of selections of fans and transformers in multiple locations/facilities to establish current regulatory compliance levels and to explore different verification testing options. For transformers these included:

- Document inspection (as developed in Task 3.1)
- Testing at an independent laboratory

- Testing on-site (at end user/ manufacturer) using the measuring equipment of an independent laboratory

- Repeating the on-site test at the manufacturer's laboratory with the manufacturer's measuring equipment

- Testing transformers in combination with manufacturer/utility/end user assessment (witness testing)

For fans, based on a potential list of approaches identified during Work Package 2 and presented at the project meeting held in Lisbon at the end of March 2017 as well as the feedback from stakeholders, the testing and evaluation methods to be assessed within the INTAS project were narrowed down to:

- Those based on current industry practices for which INTAS has investigated the strengths and limitations of:
    - scale-model testing, i.e. testing a smaller kW fan of the same design as part of series of larger fans and extrapolate findings for the larger models of the same design
    - part load testing, i.e. testing a fan in a part load operational point and calculating/extrapolating performance at the best efficiency point

  and seeing if the performance of such approaches in independent laboratories might be suitable for Ecodesign verification purposes.

- Participation in witness tests or factory acceptance tests to define which procedures could be specified for MSAs to assist at manufacturers' premises tests.

- Evaluation of a consolidated approach for auditing manufacturers conformity assessment procedures (Art. 8 of DIR. 2009/125/EC) to define recommendations on required documentation of conformity assessment, in alignment with MSAs and industry.

The categories of fan evaluated are the predominantly industrial fan types of axial fans and centrifugal backward curved fan with housing. The activities were completed and evaluated in the 6 monthly project period.

Based on the testing experience, a set of methods were recommended for further investigation and validation in the market surveillance pilot studies of work package 4.1 and 4.2:

The confidential deliverable addressing the evaluation of products within each testing type and unit category was completed in February 2018.

1.3.2.3 Task 3.3 – Multiple regulation testing

This task involved the analysis of all European, Danish, Austrian, Spanish, British, Italian and French directives and regulations that apply to fans and/or transformers to establish any potential synergies that could have an impact on the optimal means of doing market surveillance. In addition to Ecodesign

regulations it includes a review of other EU regulations, national legislation and voluntary certification schemes. The main subjects of interest were:

- Energy
  - Ecodesign
  - EPBD
- Safety
  - Electrical
  - Fire
- Workplaces
- Environment
  - Noise
  - ROHS
  - PCB

The regulations were assessed with respect to the potential for synergistic testing of fans and transformers in addition to Ecodesign conformity verification testing as well as their potential for synergies in other forms of assessments and testing.

The task concluded that there are no concrete viable options available to conduct combined multiple verification testing for either fans or transformers. But two promising synergic effects were identified: the leverage resulting from carrying out surveillance of two regulations together, and the possibility to "delegate document inspections" to other official bodies in charge of controls in contexts where the large INTAS products are installed. Additionally, voluntary certification schemes also seem quite promising. The (informal) assessment of products originating from outside the EU with international regulations could also be useful. Nevertheless, these options do not allow for parallel implementation of the classical traditional testing activities carried out by MSAs as foreseen by each specific regulation.

The following deliverables are now publicly available for this work:

- Analysis and report on other applicable regulations on fans (D3.4) - ECD report
- Analysis and report on other applicable regulations on transformers (D3.5) - ECD report

1.3.2.4 Task 3.4 – Information on testing and regulation for industry

This task began in May 2017 and concluded in March 2018. It entailed an assessment of the best practice and experiences of both MSAs and industry regarding conformity verification and conformity assessment, respectively, of fans and transformers. This task highlighted significant differences between the large fan and transformer markets. Large fans are for the most part sourced locally to minimize the chance of delays

during installation and to facilitate after sale service. In contrast, fewer companies manufacture large transformers, which may therefore be procured from other countries (these are currently exclusively within the EEA, but in theory imports from other regions could occur). Factory acceptance tests (FATs) are common practice for large transformers, but much less systematic for large fans (perhaps occurring for a maximum of 20-30% of cases, but practically only those that involve ATEX or tunnel applications). Computer simulations are used in combination with scale testing by all fan manufacturers at the design stage, the results of which are mostly trusted by clients. In contrast, clients of large transformers usually demand a design review which can include physical tests, simulations or physical inspections.

One important factor shared by both large fans and transformers is that the final destination of the product is typically already known when the order is placed by the client. This means that in theory MSAs could be notified at that stage that a product is about to be manufactured that is intended to be installed in the region for which they have authority. The time from procurement to installation of a product usually takes several months but varies from 8 weeks to as much as 2 years. For transformers, the actual production takes several months but FATs are always arranged at least 6 weeks in advance and placing on the market. Virtually all large fans are transported by truck; while large transformers are transported by truck and possibly by boat. In all cases custom authorities are notifiable when crossing hard borders (excluding within the Schengen area). As a final step, before a transformer is permitted to be put into service a conformity assessment body (CAB) with responsibility for electrical safety will conduct a mandatory safety check prior to the issuance of an operational permit.

Based on the collected intelligence, several possible models to conduct conformity verification of large fans and transformers were considered:

- The conventional model, with third party testing of the product before entering service.
- A witness test variant, in which the MSA witnesses a FAT before the product leaves the manufacturer's facilities. This approach currently only has legal standing for Ecodesign conformity verification of power transformers (not fans).
- An on-site test variant with a third-party laboratory where the MSA mandates a third-party laboratory to assess compliance before the product enters service. This could be informed/triggered by the Conformity Assessment Body assessing the product's safety in coordination with the Ecodesign MSA. In cases where the in-situ testing cannot be done according to the harmonized test standards, a product which appears not to be compliant based on the in-situ assessment could subsequently be sent for testing in a 3rd party testing laboratory to obtain legally enforceable test results.

Overall, the optimal tactics suggested for fans is to:

a) request that local producers inform MSAs when an order for an industrial fan destined to be installed in their jurisdiction is placed, or risk having a 3rd party verification assessment prior to the product being put into service, which would be costly for the final client

b) work with customs, ports and road network operatives to ensure MSAs are informed when large fans are in transit and/or to secure the destination details to know when products are to be put into service

c) also work with industrial partners to request that they inform MSAs when they (or their contractors) place an order for a large industrial fan (the incentive is that it allows the option of FATs to be requested in preference of a 3rd party test once delivered to site).

MSAs should also consider producer site visits and requesting inspection of design software evidence of the performance/conformity assessment of fans.

Noting that many fan producers serving the local market will be local to the MSA with jurisdiction for where the fans will be installed, and that all fan manufacturers use software to design their products and create records of the products (the fan design files are always stored):

- MSAs should also consider conducting producer site visits and requesting inspection of design software evidence of the performance/conformity assessment of fans. Note - some industry players have said this is the only viable conformity assessment approach and argue that it would identify non-compliance

- MSAs may have the authority to request this from local suppliers already but nonetheless,

  a) they could encourage cooperation by informing those that don't agree to this that their products are at much greater risk of 3rd party testing with concomitant risk to clients

  b) INTAS could consider proposing amendments to the next edition of Reg 327/2011 to permit this option.

For transformers witness testing at the time a FAT is done is a legally viable option for Ecodesign conformity verification assessment, is supported by industry and avoids any delay or additional costs to the private sector because it is already always done.

The biggest problem is knowing when the product is placed on the market in time to intercede to do conformity verification. Accordingly, MSAs could:

a) request that producers always inform them when an order for a transformer destined to be installed in their jurisdiction is placed, or risk having 3rd party verification pre-placing into service which will be costly for the final client

b) work with safety CABs, customs, ports and road network operatives to ensure they are informed when transformers are in transit/or being put into service and to acquire the details of where and when this will happen

c) also work with grid operators/industrial partners to request that they inform them when they (or their contractors) place an order for a large transformer (the incentive is that it allows the option of FATs to be requested in preference of a 3rd party test once delivered to site).

3rd party testing could be an option of last or very occasional resort.

The following deliverables are now publicly available for this work:

- Best practice and experiences of both MSAs and industry regarding testing of fans (D3.6) - WSE report
- Best practice and experiences of both MSAs and industry regarding testing of transformers (D3.7) - WSE report

1.3.2.5 Task 3.5 – Screening methodologies for targeting products for compliance assessment

This task commenced with preparatory activities in May 2017 and concluded in March 2018. The aim was to explore tailored, resource-efficient screening strategies to be used by MSAs prior to conducting the conformity verification methods discussed in Task 3.4.

The main challenge for both product groups is linked to the opacity of the market. MSAs don't necessarily know when products are placed on the market as they mostly go through non-advertised B2B procurement processes; however, this issue is addressed in the recommendations from Task 3.4.

The standard conformity verification actions available to MSAs are checks of:

a) technical documentation including the declaration of conformity, the technical data sheets, the CE marking and performance test reports

b) the information presented on the rating plate

c) the energy and other mandated performance requirements of the product via laboratory verification testing (or FATs for transformers).

Failure of any of these checks establishes that a product does not comply, however, they imply quite different levels of effort and cost to conduct.

MSAs can use other techniques to establish risk of non-conformity to inform decisions about whether to select a product for any given conformity verification action. These include:

a) assessing the non-conformity risk for the product group as a whole

b) assessing the non-conformity risk of the supplier

c) doing visual/measurement plausibility checks on the product

d) doing inspections of design software tools and product data files

e) doing in-situ testing.

None of these produce a legally binding outcome but they do help establish non-conformity risk and provide a potentially significant deterrent effect against non-conformity.

MSAs can apply a hierarchy of conformity verification actions based on cost versus deterrent benefit as follows:

a) a broader selection of products for technical documentation checks

b) a, potentially, slightly narrower selection for visual inspection checks (including checking the rating plate information)

c) a smaller sample for verification testing.

Based on these considerations, methods are proposed by which MSAs could progressively establish risk profiles (low, medium, high, unknown) for identified market actors. A sampling algorithm could then be used to decide which products to select from a sample of potential candidates. The weightings applied in the algorithm could take into account:

- the relative non-conformity risk
- the desire to ensure there is a possibility that any product could be selected, not just the highest risk ones
- any pre-set intention to do conformity verification on a minimum or maximum number of the product type in question within a given period or given conformity verification budget envelope.

The screening methodology outlined above can be applied for the selection of products for:

- initial conformity verification checks e.g. documentation checks
- or afterwards deciding whether to go on to include additional conformity verification checks e.g. rating plate inspections and/or 3rd party testing (if post placing on the market) and/or FATs (if pre-placing on the market)
- or to do intermediate plausibility tests – such as visual inspections for fans, checking the BOM for transformers
- or other checks e.g. inspections of design software and related files supplied by the manufacturer, or to do in situ testing.

The suggested screening methodology was assessed as being consistent with both industrial practices and MSA needs.

The following deliverable is now publicly available for this work:

- Report about the screening techniques available for product/supplier targeting (D3.8) - WSE report

1.3.2.6 Task 3.6 – Relations with industry/manufacturers – Specifically to accommodate for testing and collaborative working

The main idea of this task was to establish a network of transformer and fan manufacturers which can be involved in the different tasks in WP3. The process undertaken was as follows:

- Start in WP2 to establish contacts (e.g. from proposal phase + new contact generation)
- Enlarge contact data base with input from other partners
- Use survey recruitment to update and add more contacts.

Substantial efforts have been made to establish and maintain contacts with manufacturers, independent labs, and other industrial companies. The INTAS consortium is in direct contact with the EVIA and T&D Europe, the European manufacturer associations for fans and transformer respectively. The associations and their members are kept informed of the project developments and joint meetings allow for direct exchange and feedback on the investigated methodologies.

This work has helped to deliver access to the appropriate facilities in support of other INTAS tasks. Furthermore, a contact database available to INTAS partners is constantly updated during the project progress. In parallel to organized meetings and important ongoing discussions with T&D Europe and EVIA, this task engaged manufacturers of fans and transformers in Austria to support WP3 activities. This resulted in a witness test organized for a fan together with AEA.

1.3.2.7 Graphical flow chart of the methodological process, taking into account all Tasks within WP3

A draft graphical flow chart of the conformity verification methodological process, that takes into account all Tasks within WP3 and was presented at the Madrid Advisory Board meeting in April 2018.

1.4 Progress with Work Package 4: Evaluation of compliance assessment methodology

This work package aims at the practical evaluation of the results of the theoretical assessment methodology planned and tested in WPs 2 and 3. Partners will derive a number of lessons learnt and experiences from the project and translate these into core recommendations for both policy makers and national authorities.

Tasks under this WP began in February 2018, hence Tasks 4.1 and 4.2 “Practical evaluation and complete methodology on fans and transformers” leading project partners DTI and FFII-LCOE are defining the way to develop a step-by-step guide for the compliance verification methodology for both product categories aimed mainly at market surveillance authorities. During the coming months, the methodologies proposed in WP3 will be validated by MSAs and industry stakeholders. The plan is to collect feedback through the national stakeholders at the second round of meetings at national level, to carry out pilot actions by the partners ASAE, ENEA, ANRE, BHTC, TUKES within their region and to adjust and correct the final methodologies accordingly.

Additionally, leading project partner WSE will evaluate the costs and benefits of the new methods of compliance verification under Task 4.3 building on the work conducted in WP3. This task will evaluate the costs and benefits of all potential options to determine the likelihood that a product’s energy performance is compliant with Eco-design requirements. It will therefore combine currently legally applicable methods (documentation inspection, testing at 3rd party labs, witness testing) with risk assessment methods (plausibility checks, , in-situ testing, simulation modelling etc.) with the aim to determine the applicability, costs and reliability as compliance assessment indicator of each.

Finally, in October 2018, INTAS will come up with policy recommendations for future regulation on large and industrial products. Lead by partner ECOS, the outcome of Task 4.4 will inform policy makers at both national and European level of the current challenges with market surveillance of large and industrial products falling under the Ecodesign Directive and give clear and precise policy recommendations based on the outcomes of the project.

1.5 Progress with Work Package 5: MSA collaboration and strategic capacity building

Work Package 5 comprises three main activities:

- Task 5.1 – Awareness raising among MSAs and facilitation of information exchange
- Task 5.2 –Strategic capacity building and awareness raising at the pan-European level
- Task 5.3: Collation of outputs and final reports

In this fourth reporting period the project:

- Followed-up on the creation of the ADCO’s INTAS working group (see the 2nd 6-monthly report) to maintain a dialogue with MSAs on INTAS project activities
- Presented INTAS activities and participated in an active dialogue on Market Surveillance at the EVIA-hosted event on *How to improve market surveillance of ventilation products in the EU?*, held in Brussels on 10th May 2017.

Engagement of MSAs through the ADCO, with both Paul Waide (WSE) and Teemu Hartikainen (TUKES) as contact points, has continued to be fruitful. Some findings and requests from the INTAS project were

presented to the ADCO on the 22nd of November 2017 in Madrid and ADCO members were surveyed to provide important inputs into the Work Package 3 deliverables.

The Task 5.2 activities on strategic capacity building and awareness raising at the pan-European level started in February 2018 and the Task 5.3 activities which concern the collation of all the INTAS project outputs and compilation of the final report will start in June 2018.

1.6 Progress with Work Package 6: Dissemination and Communication

Work Package 6 comprises a number of dissemination and communication activities. The full website, FAQs and visual identity of the project (i.e. logo, project leaflet, templates, etc.) have been completed to a high standard and are currently in use throughout the many areas of work within the project.

The collection of the interested parties (e.g. stakeholders at national level and stakeholders with a pan-European area of influence) materialised in the form of a stakeholder database, and even though this was initially completed in June 2016, it continues to be regularly updated to mirror the new interests in the project.

Furthermore, after the successful first round of national (and European) focal-point meetings in 2017, the project partners are due to hold the second round of meetings in their countries in the coming months, where national stakeholders will be invited to share their experiences in testing transformers and fans, and will be given the opportunity to review and comment on the methodologies proposed by the INTAS project.

Furthermore, Task 6.5 foresees INTAS' participation at international events. During the 4th project period partners have been working on the submission of several abstracts to present the outcomes of the project to wider audiences. Project activities related to large fans were presented at the FAN2018 conference held in Darmstadt (Germany) on 18-20 April 2018, and INTAS will also be presented in Brussels at the European Sustainable Energy Week (EUSEW) on 6 June 2018.

WP6 foresees the dissemination of final outcomes and methodologies in a **Final Conference** at the end of the project. The Project Consortium agreed that this event will take place in **Brussels on the 12th of February 2019.**

Appendix A: Introduction to the INTAS project

Project description

The INTAS project comprises six work packages as set out below.

Work Package 1 – Management and coordination

Lead = WIP, Contributing parties = all project partners (see Section 2.2).

The main objectives of the management and coordination are the following:

1) Efficient management and co-ordination of the project ensuring progress in line with the budget and the schedule of milestones and deliverables.

2) Risk management and overall strategic project guidance.

3) Building and maintaining effective communication channels within the consortium.

The work package deliverables:

- D1.1 Minutes of 7 project meetings
- D1.2 Internal communication platform
- D1.3 First progress report.

Work Package 2 – Landscape of testing avenues

Lead = ECD, Contributing parties = WIP, ECOS, ECI, WSE, AEA, BHTC, SEVEn, DTI, TUKES, FEWE, DGEG, ANRE, FFII-LCOE, ENEA, ASAE (see Section 2.2).

This work package aims to analyse in depth the existing testing avenues in Europe and the rest of the world, and to explore test standards, facilities, procedures and methods already in place to help, including:

1) EU (and worldwide) MSAs to set up a sustainable and effective market verification of energy performance compliance and information requirements for large products with a specific focus on power transformers and fans.

2) EU (and worldwide) standardisation bodies to amend actual standards for energy performance compliance and information requirements for large products with a specific focus on power transformers and fans.

3) EC to enhance Eco-design policy measures on energy performance of large products with a specific focus on power transformers and fans.

This work package also aims to define a common approach at European level with respect to MSA methods and convergence in testing approaches as well as exploiting synergies by mutualizing the means of testing at EU scale.

The work package deliverables (with delivery dates in brackets) are as follows:

- D2.1 Database and report on EN/IEC/ISO technical standards and National laws/decrees of interest for testing energy performances of A and B product groups separately (October 2016)
- D2.2 Database (non-exhaustive) about test labs suitable for energy performance test of A and B product groups providing for each lab and each product range for in lab testing & in-situ testing (February 2017)
- D2.3 Report for A and B product groups on (February 2017)
- D2.4 Report on accreditation possibilities for labs/procedures (if any) for A and B product groups (February 2017)
- D2.5 Report for A and B product groups on the degree of compliance which is likely to be produced through normal commercial practices including specifically (February 2017)
- D2.6 Report on worldwide and EU practices/plans on energy performance market verification including, for A and B product groups (February 2017).

Work Package 3 – Defining an effective compliance framework for MSAs and manufacturers

Lead = AEA, Contributing parties = WIP, ECOS, ECI, ECD, WSE, BHTC, SEVEn, DTI, TUKES, FEWE, DGEG, ANRE, FFII-LCOE, ENEA, ASAE (see Section 2.2).

The overall objective of this work package is to clearly define the process and methodology by which market surveillance authorities (MSAs) can identify, select, and evaluate large, industrial products. The work package is divided into interconnected Tasks that are each essential for effective testing and evaluation of compliance. These Tasks form a workflow that simplifies and streamlines market surveillance activities. These Tasks can generally be categorised as:

- Identification and classification of product types, and the related document requirements (Task 3.1).
- Evaluation and testing – the best strategy based on product classification (Task 3.2).
- Links with other legislation – can other legislation be enforced simultaneously to further reduce costs? Assessment of Member State and EU-level legislation (Task 3.3).

- Building collaboration with MSAs and manufacturers – understanding how and when fans and transformers are produced, particularly looking how customised and unique products are procured and delivered (Task 3.4).

- Derivation of screening methodologies for targeting products for compliance assessment (Task 3.5).

A further Task, Task 3.6, works throughout the project to ensure the availability and accessibility of manufacturing and laboratory facilities. Several manufacturers have expressed an interest in working with the project a priori willing to provide further data and input and opening their facilities to allow for on-site/in-situ testing. The role of Task 3.6 is to formalise and agree on specific terms and dates for such activities to take place. In terms of the project's overall objectives, this WP will:

- Help MSA's to develop an effective compliance framework based on the documentation and analysis of available information and including MSA cooperative activities.

- Produce guidelines to help industry deliver compliance and help manufacturers to establish compliance assessment strategies that minimise disruption of market entry.

- Derive alternative compliance measures for very large products (or others unviable to test).

Finally, this work package aims to foster a common approach at European level, which addresses MSA methods and tests convergence as well as synergies by mutualizing the means of testing at EU scale. The overall methodology will be expressed in a graphical work-flow diagram that highlights the importance of each step of market surveillance actions.

The work package deliverables (with delivery date in brackets) are as follows:

- D3.1 Report including template checklist on information and additional requirements related to inspection of fans (April 2017)

- D3.2 Report including template checklist on information and additional requirements related to inspection of Transformers (April 2017)

- D3.3 Evaluation of products in each testing type and unit category (January 2018)

- D3.4 Analysis and report on other applicable regulations, including at the national level, to be considered when undertaking inspection on fans (January 2018)

- D3.5 Analysis and report on other applicable regulations, including at the national level, to be considered when undertaking inspection on transformers (January 2018)

- D3.6 Report highlighting the best practice and experiences of both MSAs and industry regarding testing of fans (February 2018)

- D3.7 Report highlighting the best practice and experiences of both MSAs and industry regarding testing of transformers (February 2018)
- D3.8 Report about the screening techniques available for product/supplier targeting (January 2018)
- D3.9 Graphical flow chart of the methodological process, taking into account all Tasks within WP3 (February 2018).

Work Package 4 – Evaluation of compliance assessment methodology

Lead = ECOS, Contributing parties = WIP, ECI, ECD, WSE, AEA, BHTC, SEVEn, DTI, TUKES, FEWE, DGEG, ANRE, FFII-LCOE, ENEA, ASAE (see Section 2.2).

The theoretical compliance assessment methodology at this stage will have been planned and tested in practice in accordance with the tasks and deliverables of work packages 2 and 3. It is vital at this stage to analyse the results of this assessment and ensure that the proposed methodology is valid and reliable, particularly in accordance with the regulations. In addition, it is necessary to help clarify all the options and trade-offs that could be applied in a practical approach (such as for example screening techniques for products targeting) to compliance assessment in order to support the most effective allocation of MSA resources. Further, it is at this stage that the second national focal point meeting (details of which are outlined in WP6) will take place, allowing for national interests, including the concerns of market surveillance authorities, to provide feedback and input. Aside from the evaluation, this work package is responsible for drafting final recommendations and guidelines.

The work package deliverables (with delivery date in brackets) are as follows:

- D4.1: Final Methodology on market surveillance of Fans (September 2018)
- D4.2: Final Methodology on market surveillance of Transformers (September 2018)
- D4.3: Evaluation of costs, benefits, and new methods of compliance verification (September 2018)
- D4.4: Final policy recommendations for future legislation on industrial products (October 2018).

Work Package 5 – MSA collaboration and strategic capacity building

Lead = WSE, Contributing parties = WIP, ECOS, ECI, AEA, BHTC, SEVEn, DTI, TUKES, FEWE, DGEG, ANRE, FFII-LCOE, ENEA, ASAE (see Section 2.2).

The objective of this work package is support strategic capacity building through:

- Awareness raising and information exchange.

- Development of compliance verification screening tools.
- Fostering market surveillance collaboration between MSAs.
- Raising awareness of the value proposition of product energy performance market surveillance among key funders, decision makers and budgetary resource allocators.

The work package deliverables (with delivery date in brackets) are as follows:

- D5.1: electronic leaflet/report - Project summary (May 2016)
- D5.2: electronic report - Report on strategic capacity building and awareness raising at the pan-European level (July 2018)
- D5.3: electronic report - Report on the overall methodology for the targeting and compliance verification for fans and transformers (November 2018)
- D5.4: electronic report - Final report summarising findings from fans and transformers (November 2018).

Work Package 6 – Dissemination and Communication

Lead = ECOS, Contributing parties = WIP, ECI, ECD, AEA, BHTC, SEVEn, DTI, TUKES, FEWE, DGEG, ANRE, FFII-LCOE, ENEA, ASAE (see Section 1.3).

The highly technical nature of this project requires a specific, targeted dissemination strategy. This work package will outline such a strategy using a national focal-point approach that shall be adopted throughout this project in order to ensure that dissemination of the project outcomes reaches the largest number of stakeholders. It is planned that the dissemination of this work package will allow for input to the project from the various stakeholders this WP intends to reach including, but not limited to; manufacturers, trade associations, retailers, importers, consumer and environmental organisations, and relevant national government departments.

Further, the work package uses a similar ‘focal point’ system to disseminate to European level trade and manufacturer associations, and EU-level consumer and environmental NGOs.

The work package deliverables (with delivery date in brackets) are as follows:

- D6.1: Database of collection of interested national parties + EU-level stakeholders (June 2016)
- D6.2: Database of minutes, including detailed input of national stakeholders, of all physical and virtual/teleconference meetings (August 2018)

- D6.3: Collection of minutes from project meetings, or written evidence of consideration of national input and 2 excel tables listing comments and questions with their answers and replies. Electronic format (August 2018)
- D6.4: Final reports translated (if appropriate) and printed (December 2018)
- D6.5: Coordination of final conference (February 2019)
- D6.6: Participation in 2 international (February 2019)
- D6.7: Creation of project website and FAQs in English language (August 2016).

Project partners

The INTAS project comprises the following partners.

N°	Participant name, role in the project and area of activities implementation	Country	Role
1	WIP – Renewable Energies (WIP) Coordinator – Europe and worldwide	Germany	Coordinator
2	European Environmental Citizens' Organisation for Standardisation (ECOS) Technical expert – Europe	Belgium	Beneficiary
3	European Copper Institute (ECI) Technical expert – Europe	United Kingdom	Beneficiary
4	Engineering Consulting and Design (ECD) Technical expert – Europe	Italy	Beneficiary
5	Waide Strategic Efficiency Ltd. (WSE) Technical expert – Europe	United Kingdom	Beneficiary
6	Austrian Energy Agency (AEA) National focal point – Austria	Austria	Beneficiary
7	Federal Public Service Health, Food chain Safety and Environment (BHTC)	Belgium	Beneficiary

	National focal point – Belgium		
8	SEVEn, The Energy Efficiency Center (SEVEn) National focal point – Czech Republic	Czech Republic	Beneficiary
9	Danish Technological Institute (DTI) National focal point – Denmark	Denmark	Beneficiary
10	Finnish Safety and Chemicals Agency (TUKES) National focal point – Finland	Finland	Beneficiary
11	Polish Foundation for Energy Efficiency (FEWE) National focal point – Poland	Poland	Beneficiary
12	Direção-Geral de Energia e Geologia (DGEG) National focal point – Portugal	Portugal	Beneficiary
13	Regulatory Authority for Energy (ANRE) National focal point – Romania	Romania	Beneficiary
14	Fundación para el Fomento de la Innovación Industrial Laboratorio Central Oficial de Electrotecnia (FFII-LCOE) National focal point – Spain	Spain	Beneficiary
15	Italian National Agency for New Technologies, Energy and Sustainable Economic Development (ENEA) National focal point – Italy	Italy	Beneficiary
16	Food and Economic Safety Authority (ASAE) National focal point – Portugal	Portugal	Beneficiary

Project advisory board

One of the first tasks of the project was to formulate a project advisory board to ensure guidance and advice is provided to the project by leading relevant stakeholders. The advisory board was formally inaugurated at the 1st Technical Progress meeting held in Brussels on September 19th & 20th, 2016. The members include leading Ecodesign and H2020 desk officers from the Commission, representatives of MSAs that were not formally partners within the project, representatives of the leading European associations representing the

fan and transformer industrial sectors. The INTAS partners are therefore confident that all pertinent information will be brought to the attention of the project team and that the findings of the project will be disseminated among the key stakeholders who are best able to make use of this work. The INTAS Advisory Board held its first meeting in Lisbon on 28th March 2017 and its most recent meeting in Madrid April 2018.

Advisory Board of the INTAS project		
Stakeholder group	**Organisation**	**Name**
MSA – DE	BAM	Floris Akkerman
MSA – DE	MUKE BW	Tamara Janke
MSA – CZ	SEI	Marcela Juračková
MSA – DK	DEA	Bjarke Hansen
MSA – SE	SEA	Lina Kinning
MSA – NO	NVE	Ingvill Sjøvold Nilsen
Industry Association – Transformers	T&D Europe	Michel Sacotte
Industry Association – Fans	EVIA	Karsten Witt
Policy maker	EC DG Growth	Cesar Santos
Policy maker	EC DG Energy	Ronald Piers de Raveschoot
Standardization – Fans	ISO fans	Tony Breen
Transmission System Operators	ENTSO-E	Jean-Christophe Riboud

More information
about the INTAS project activities
and all of its results
are published on:

www.INTAS-testing.eu

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