

Project Title: **Pre-normative research on resistance to mechanical impact of composite overwrapped pressure vessels**

Project acronym: **HyFactor**

Instrument: **171 - Article 171 of the Treaty**

Thematic Priority: **SP1-JTI-FCH.2013.5.6**

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HYFACTOR

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DELIVERABLE ID	D4.1
Deliverable name	Summary of industrial constraints for the use of NDT in industrial sites
Lead beneficiary	Air Liquide
Contributors	Air Liquide, Hexagon

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1. Executive summary

1.1. Description of the deliverable content and purpose

This deliverable is the first of the WP4 of HYPACTOR project.

In WP4, periodic inspection of COPV by Non Destructive Testing (NDT) methods is assessed. Two NDT methods are studied as they are the most mature, already supported in standards (visual inspection) or in development (Acoustic Emission Testing).

This deliverable provides the operating conditions to consider for the implementation of AE monitoring and visual inspection. One aim of NDT is to perform the periodic inspection with limiting perturbation of the operation.

1.2. Deviation from objectives, corrective action

N/A

1.3. Technical progress

N/A

1.4. Impact of the results

N/A

1.5. Dissemination activities

1.5.1. Publishable summary of the deliverable

One industrial target in HyPactor project is to achieve periodic inspection of pressure vessels by combination of

- external visual examination of accessible areas
- Acoustic Emission (AE) Test during pressurization

3 objectives are looked at:

- no dismantling of the COPV from the frame;
- no hydraulic proof test as filling with water leads to additional drying steps;
- Perform AE monitoring in gas during a typical filling at a pressure as close as possible from the working pressure (stationary and transportable scenarios), ideally during the regular usage.

The deliverable D4.1 gives constraints for the use of NDT in industrial sites, in terms of:

- Applicable regulation, codes & standards
- Type of applications and vessels integration (bundles, trailers, stationary vessels)
- Industrial constraints due to existing workshops or location workshops
- Specific constraints for use of visual examination
- Specific constraints for use of acoustic emission testing

1.5.2. Dissemination activities

Confidential deliverable.