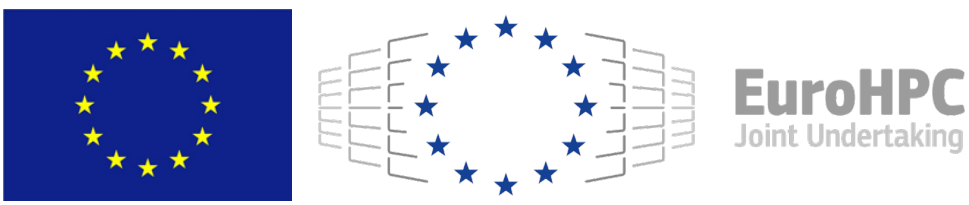
**HORIZON-EUROHPC-JU-2021-COE-01**


**CEEC – Centre of Excellence in Exascale CFD**

*Grant Agreement Number: 101093393*

# D6.1 – CEEC Brand and Website

*WP6: Communication, Dissemination and Exploitation*



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# Document History

| Partner | Date | Comments | Version |
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| UMU/KTH | 21/04/2023 | Internal Review | 0.2 |
| USTUTT | 25/04/2023 | Incorporated feedback from review | 0.3 |
| USTUTT | 28/04/2023 | Final version | 1.0 |

# List of Abbreviations

CFD Computational Fluid Dynamics

CoE Centre of Excellence

GDPR General Data Protection Regulation

HLRS High-Performance Computing Center Stuttgart

HPC High-Performance Computing

NCC National Competence Center

PM Project Month

SEO Search Engine Optimization

## Executive Summary

This document is the first deliverable of work package 6: "Communication, dissemination, and exploitation" of the Centre of Excellence for Exascale CFD (CEEC), co-funded by the EU. This work package is concerned with the effective communication of the exploitable results of the project, management of intellectual property, and support establishing CEEC as a principal contact for cutting edge computational fluid dynamics (CFD) on Exascale High-Performance Computing (HPC) systems.

This first deliverable D6.1: "CEEC Brand and Website" will explain the ideas behind the corporate identity and design of CEEC as well as the implementation of the initial project website. For these activities this document describes the general objectives, current implementation, tools in use, and future development. As opposed to the deliverable D6.2: "Communication and dissemination plan", it is considered a stand-alone document that will not be updated. Instead, all necessary brand updates and regular website updates will be reported in subsequent stand-alone deliverables.

# Table of Contents

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# Introduction

The Center of Excellence for Exascale CFD aims to advance state-of-the-art CFD algorithms and models with the clear goal of enabling exascale performance for several lighthouse cases with high impact in industrial practice.

In order to help establish CEEC as a principal hub for industrial and academic stakeholders in the field of CFD, the website and other communication materials of the project shall raise awareness about the activities and expertise of CEEC among its stakeholders. These stakeholders will be described in the future deliverable D6.2, due in project month (PM) 6.

In this deliverable, the development and purpose of the CEEC brand corporate design and its implementation in relevant communication and documentation material is described. Also, the setup and purpose of the website as a focal point of information is explained. Finally, the deliverable describes the outlook for future development.

# Corporate Identity

CEEC aims to implement an ambitious communication strategy disseminating highly technical activities. In order to ensure that all communication measures can be clearly traced back to CEEC, creating a corporate identity is the first step for integrated communication. The CEEC corporate identity pursues the following goals:

- Ensuring recognition
- Creating awareness
- Transmitting CoE culture
- Helping project partners identify with the CEEC brand

The corporate identity includes visual elements such as logo (see Section 2.2), colour (see Section 2.3), fonts, as well as culture, and the materials in which the corporate design will be implemented. To facilitate consistent and low effort adoption of the corporate identity by all partners, a complete corporate design manual was produced including logo examples, colour schemes, font download links, and document templates in multiple file types. This full manual is attached here as **Error! Reference source not found.**.

## 2.1 Brand development

The main goal of CEEC is to maximize the scalability and performance of CFD codes for six industrial and scientific high-impact use cases. When thinking about culture, attributes, and ambitions that should be connected to the CEEC brand, the following concepts were identified:

- High-tech
- Exascale

- Efficiency
- Flow
- Speed
- Progress

These thoughts have been implemented in all further aspects of the graphic development of the CEEC brand, such as the colour scheme and the logo.

## 2.2 Logo Development

Given the highly visual nature of flow simulation, using some kind of flow graphic in the CEEC logo made sense from the perspective of recognisability and corporate identity. However, implementing this concept was not straightforward.


Figure 1: Initial Logo Concept Draft

The first draft of the logo, a basic CFD simulation around the letters "CEEC", demonstrated that representing fluid flows both recognizably and readably is nearly impossible. The CFD lines here were not emblematic enough to look like the type of CFD undertaken in CEEC and were not particularly visually attractive. However, more recognizable three-dimensional CFD flows around the acronym text were entirely unreadable. Therefore, it was decided that CFD “waves” would be replaced with more abstracted flow “streamlines” for the sake of readability and attractiveness.

Thus, the CEEC logo now consists of the word mark "CEEC" and a figurative mark, which includes streamlines evoking fluid flow. Alternate versions of the logo additionally include the full name “Center of Excellence for Exascale CFD” under the streamlines and acronym and can have a transparent or black background, as appropriate.


Figure 2: Final Logo Design

The font style used for the logo is called ‘Effra CC Black’. All other headings, subheadings, and body text are in variations of Oxygen [1], a google font.

The figurative mark evokes flowing fluids through the blue/green of water or air. The simple and modern design also evokes a highly technical and streamlined product culture similar to logos of other highly technical software solutions. Both concepts support the project's culture stated above.

## 2.3 Colour scheme

The main colour of the CEEC corporate design is a dark blue green that provides high-contrast with the white lettering of the main logo and is pleasant and calming to the eye. The corporate design also includes two pastel colours for accents in blue and green, which can be an alternate logo background with the colours transitioning at 45 degrees from the right top corner (blue) to the left bottom corner (green).

A monochromatic background for non-logo content consists of grey "streamlines" on a transparent background, which can be white in the case of our PowerPoint and word content templates or the logo blue/green in the case of the PowerPoint and word title or end pages. This grey background is also used in the main content of the CEEC website.

To ensure sufficient contrast between website main content and the graphical background, opacity has been reduced to comply with WCAG 2.1 standards [2].

For complete details on colours including specific colour codes and examples of all graphics, see **Error! Reference source not found.** for the full corporate design manual.

## 2.4 Templates

As stated above, an important aspect of the CEEC corporate design is the identification of the project partners with the brand. This is best achieved by providing them with consistent material to use when representing the brand externally at conferences, workshops, and trainings.

Within WP6, one task was to develop templates for materials created in Microsoft Word and Microsoft PowerPoint file types for documents such as white papers and presentations (see **Error! Reference source not found.**, page 8).

As the main version of the logo is both colourful and negative contrast, it is only appropriate for title and end slides or pages. For the main content, the monochromatic versions of the logo and the grey "streamlines" on a white background are used in both slide and page templates


Figure 3: Title slide of CEEC master slide template


Figure 4: Content slide from CEEC slide template

The corporate design manual was further used to design materials such as posters, social media profile pictures, and social media profile banners.

More information at:

# CEEC

## Centre of Excellence in Exascale CFD: Finding Solutions to Grand Problems at the Frontier of CFD


### Abstract:

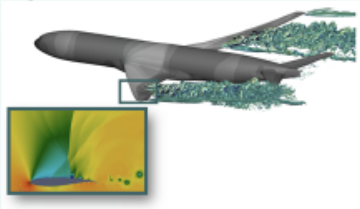
We are constantly surrounded by moving gases and liquids, whether our blood flow or the air flow around air wings. Specifically, understanding the turbulent behaviour of gases and liquids has direct societal impact. It will be key for enabling the transition to a carbon-free economy. With the advent of powerful computers and new and ever more efficient numerical algorithms, complex systems like these flows can be simulated with increasing realism, bypassing the time and expense of experimentation. However, codes are not yet ready to run on these systems. Additionally, even at exascale, realistic flow simulations would run prohibitively long without tailoring granularity and accuracy to specific cases. CEEC's ambition is to enable the use of exascale computers for key computational fluid dynamics (CFD) applications and demonstrate their capabilities through key light-house cases.


### Lighthouse Cases:

#### Shock - Boundary Layer interaction and buffet on wings at the edge of the flight envelope

FLEXI (Alya framework as comparison and validation partner)

Shock buffet, which occur when super-sonic air pockets of air over a wing are terminated by normal shock waves and oscillate, resulting in flow disruption and loss of lift, undermines both flight safety and wing structure. It leads to high dynamic loads on the wings, a highly unsteady wing wake, a rough flight, and increased structural fatigue of the wing. Thus, understanding and reliably predicting shock buffet is important for flight safety, efficiency, and new aircraft design concepts.



#### Simulation of Atmospheric Boundary Layer flows

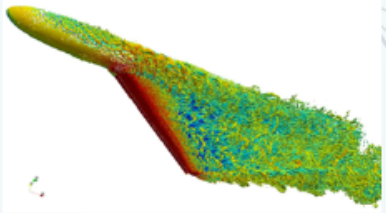
Nek5000 and NekRS

In addition to vertically exchanging moisture and aerosols in the atmosphere, Atmospheric Boundary Layer (ABL) flows affect transportation, renewable power generation (wind and solar), pollutant dispersion, etc.. Thus, being able to simulate them is important for the study of wind farms, urban canyons, and basic weather modeling. However, these highly turbulent flows are impacted by density stratification from surface heating and cooling, regional weather patterns and terrain morphology. They are further complicated by Coriolis effects due to Earth's rotation. In collaboration with the Exawind project, researchers have focused on developing reliable high-fidelity Large-Eddy-Simulation (LES)-models for ABL flows and improved wall models.

#### High fidelity aeroelastic simulation of the SFB 401 wing in flight conditions

Alya

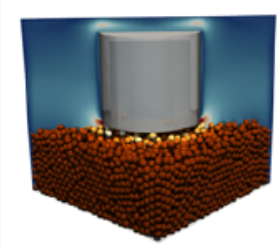
Certifying aircraft requires understanding shock buffets' impact on wing structural dynamics. This lighthouse case will perform a high fidelity aeroelastic simulation of the SFB 401 wing in a transonic regime (Ma = 0.8) using existing Large Eddy Simulation models for compressive flows. This case study is also known by the research community as the HIRENASD wing model.



#### Localized erosion of an offshore wind-turbine foundations

walBerla

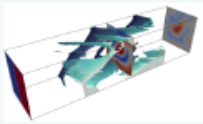
Suction foundations for offshore wind turbines can have a significant risk of erosive failure. Nevertheless, this type of marine foundation is gaining growing relevance as an environmentally friendly alternative to monopile foundations. However, if the operating suction exceeds a critical threshold during the suction-driven installation, the large hydraulic gradients within the flow network imposed in the seabed may cause piping failure (i.e. a localized erosion of soil channels), which would negate the hydraulic seal of the bucket and prevent further installation.

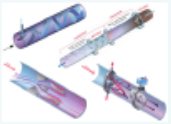


#### Topology optimization of static mixers

Neko

Static mixers, a part of a pipe in which the incoming fluid streams are mixed by the internal pipe geometry while decreasing pressure as little as possible, have been used since the 1970s for blending fluids in applications ranging from waste-water treatment, to food processing, to pharmaceutical and chemical applications. Since static mixers are passive devices without any moving parts, they are reliable, low maintenance, and inexpensive to produce. However, optimizing static mixers demands understanding the multiscale nature of turbulence : macromixing of the large convective scales of the mean flow, mesomixing at smaller inertial scales, and micromixing at the diffusive scales.





#### Merchant ship hull

Neko

In contrast to aerospace, the marine industry lags in adopting high-fidelity simulation for design. Moreover, large vessels are a particularly challenging computational problem because they involve two-phase flow, extremely high Reynolds numbers, and dynamically changing geometry at free surfaces. In fact, the necessary hardware resources and methodological maturity of computational methods are still lacking. We will capitalize on increasing computational resource availability and push the boundaries to perform high-fidelity simulations at least in model scale. For this, we consider an established test case, employed in both computations and water-channel tests.

- Alya: Simulation code for high performance computational mechanics that solves coupled multi-physics problems
- FLEXI: Scalable framework for solving the unsteady compressible Navier-Stokes equations
- Nek5000/NekRS: Open-source spectral element solver for CFD
- Neko: Highly portable framework for high-order spectral element flow simulations
- walberla: Highly scalable framework for CFD simulations based on the Lattice Boltzmann Method (LbM)


### Disclaimer

This work has been supported by the CEEC project, which has received funding from the European High-Performance Computing Joint Undertaking (JU) under grant agreement No 101093393. The JU receives support from the European Union's Horizon Europe research and innovation programme and Sweden, Germany, Spain, Greece, and Denmark.


Figure 5: Example poster derived from corporate design manual

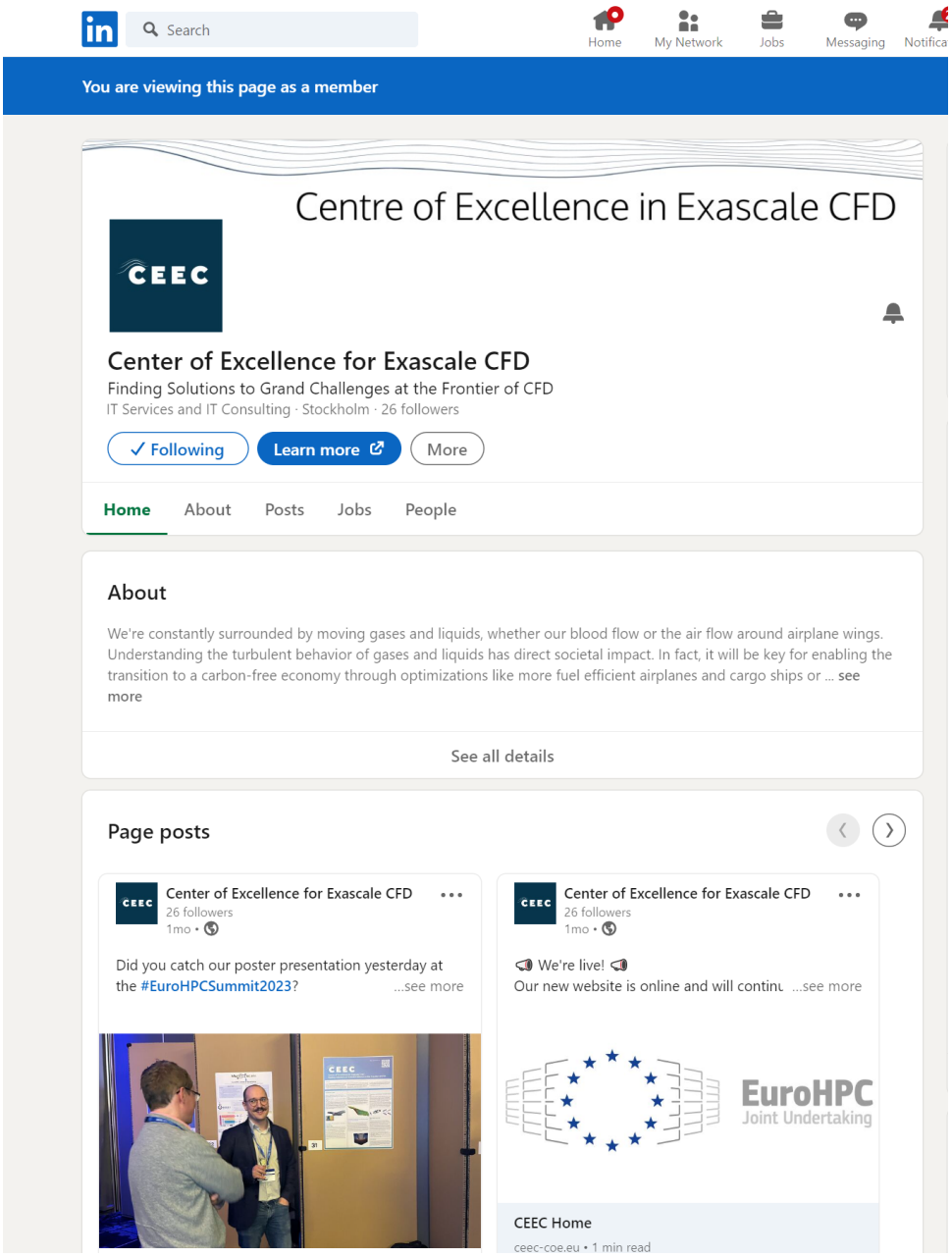



Figure 6: CEEC LinkedIn Profile

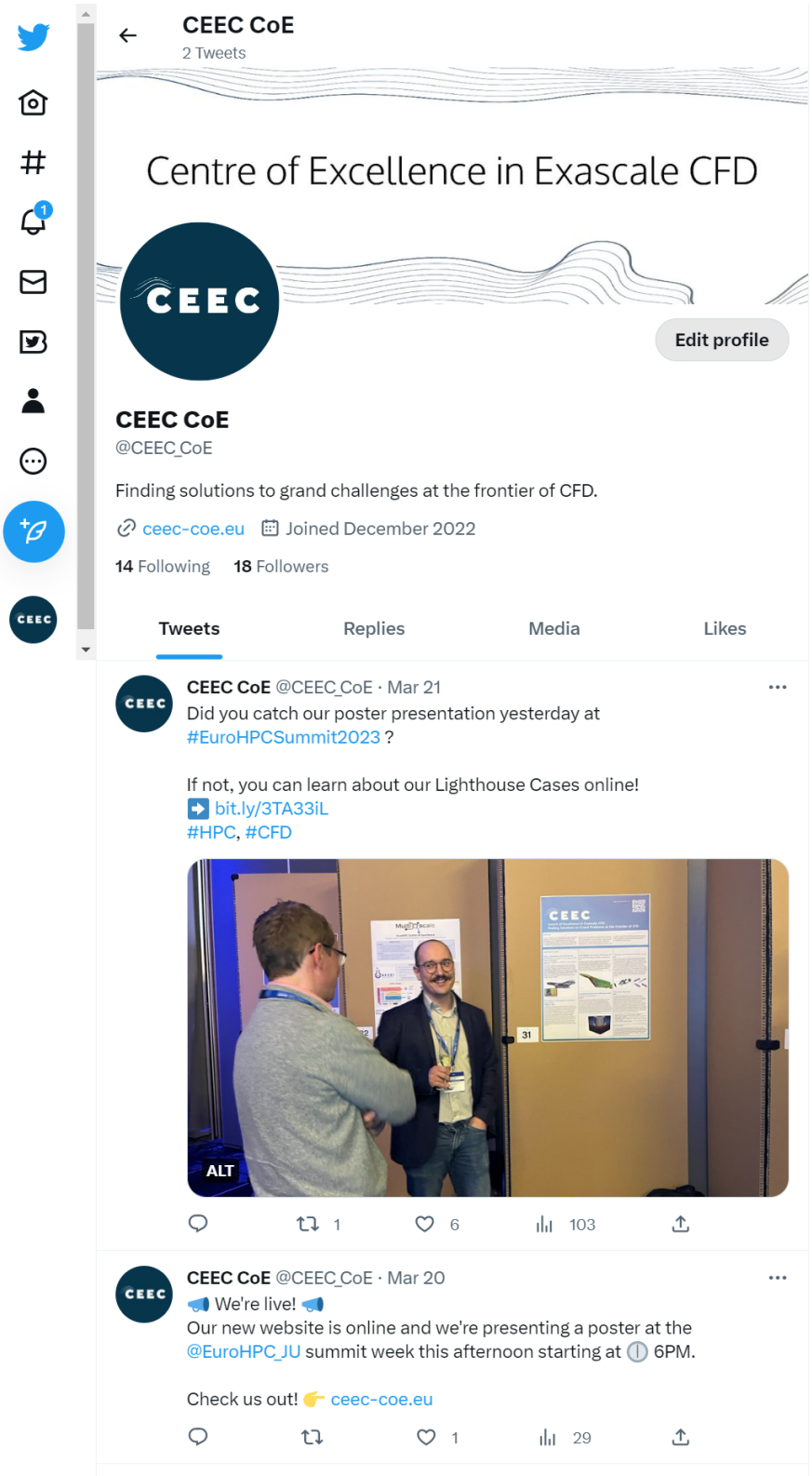



Figure 7: CEEC Twitter Profile

## Website

The CEEC Website is accessible through the URL: https://ceec-coe.eu [3] and uses a standard OceanWP [4] WordPress template to enable simple content management. The design was adapted to be in line with the CEEC corporate design. The website's main purpose is to give visitors an idea of how CEEC activities will advance the state-of-the-art in CFD simulations with high-impact on industry. A secondary goal is to provide basic explainers of CFD and associated codes that are appropriate for a non-scientific reader to ensure that the general public can also understand work done by CEEC and even other CoEs working on CFD. Lastly, the website provides a contact form to serve as a gateway for stakeholders both inside and outside of the European HPC ecosystem to contact the project team.

The header area of the website contains the CEEC logo and the main menu navigation including links to the CEEC Lighthouse Cases, news feed, publications, and European HPC Ecosystem landing page.

The sidebar appears on the homepage and some other landing pages with links to recent updates in the news section. It is omitted from the news page itself and from pages with a narrower focus like each of the Lighthouse Cases in order to increase readability of technical content and space for graphics.

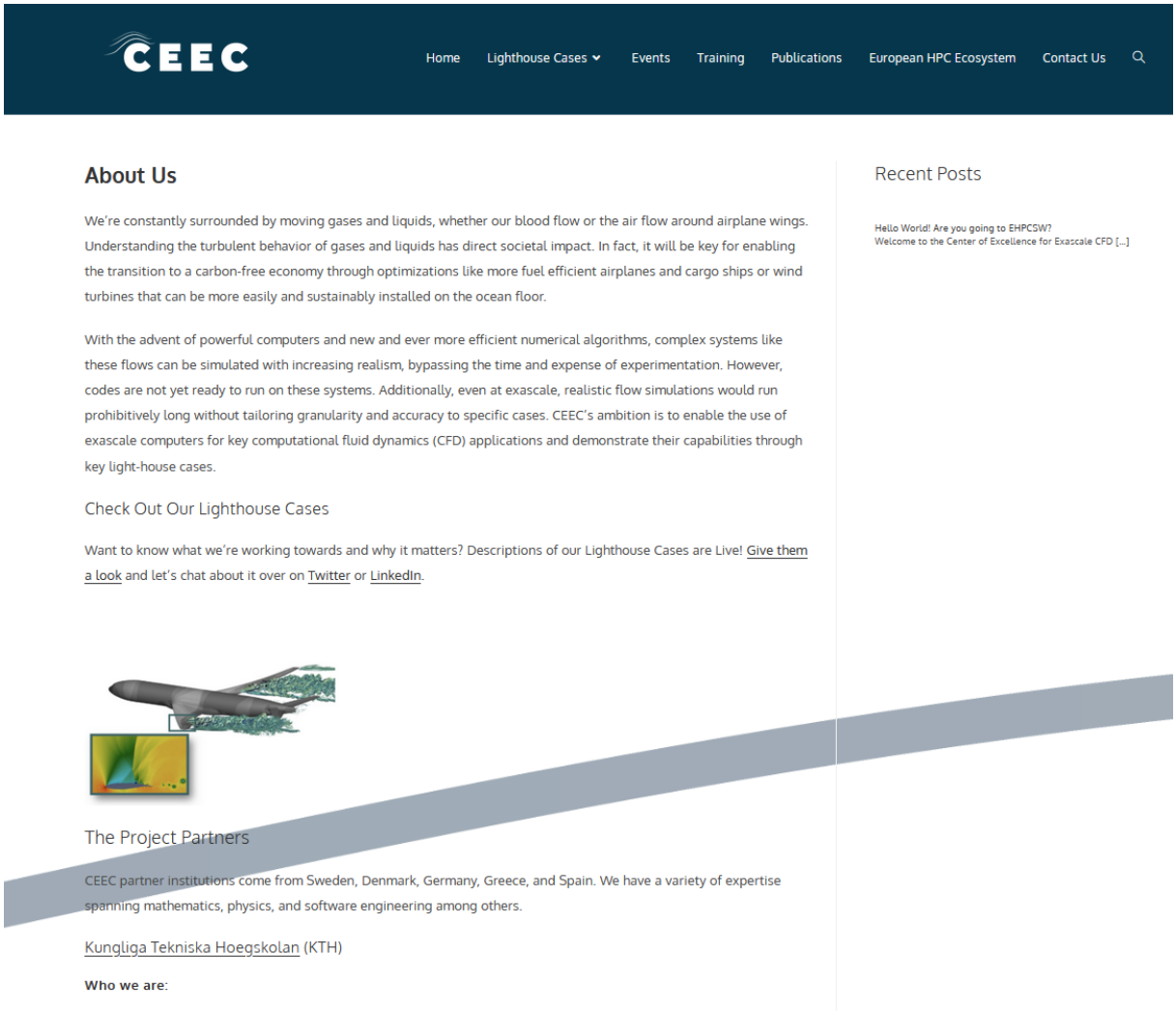



Figure 8: Ceec-coe.eu Homepage (April 2023)

The footer section of the website links to CEEC social media channels, privacy and cookie policies, and additionally displays the CEEC EU funding acknowledgement and disclaimer.

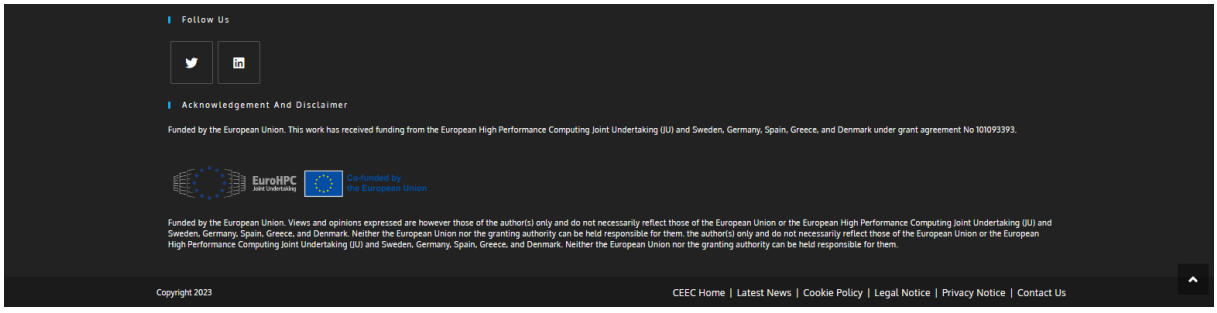



Figure 9: Ceec-coe.eu Footer

## 3.1 Structure and Navigation

### 3.1.1 Homepage and About

For the time being, the "About" page serves as the homepage for CEEC. It gives an overview of the CEEC project mission, goals, project timeline, and structure. It also provides information about:

- Expertise: explanations of what expertise each partner brings to the project.
- Community: brief description of audiences that CEEC aims to reach with this website.
- Industries: description of key industries which will benefit from CEEC work (including links to relevant Lighthouse Cases).

Additionally, it provides an introduction to the participating partners and a brief description of CEEC's position in the greater European HPC ecosystem. A more complete description of this ecosystem and partner projects such as related CoEs, the support action CASTIEL2, and local EuroCC2 National Competence Centres (NCCs) is linked from this page and provided on a separate, dedicated page called "European HPC Ecosystem".

As CEEC produces more content, the intention is that the about page will no longer be the homepage and instead be linked from the main menu. When this happens, the homepage would instead consist of a brief introduction to CEEC, a feature news article, and other more graphical representations of content for a more engaging homepage.

### 3.1.2 Lighthouse Cases

The work conducted by CEEC is built around six Lighthouse Cases with high industrial impact. As such, we know part of their story content already and they can serve as a readable introduction to future CEEC impact. The website and main navigation menu thus have a Lighthouse Case landing page with subpages for each specific case:

- Shock - Boundary layer interaction and buffet on wings at the edge of the flight envelope
- High fidelity aeroelastic simulation of the SFB 401 wing in flight conditions
- Topology optimization of static mixers
- Localized erosion of an offshore wind-turbine foundation
- Simulation of Atmospheric Boundary Layer flows
- Merchant ship hull

These pages are referenced in other places on the website including the About page and pages for the related codes.

### 3.1.3 Publications

All publications related to CEEC work will be made available on the CEEC website publications page. Each publication also has a corresponding blog entry that provides a

more general language teaser and overview for the benefit of both scientific and non-scientific audiences. The publications and related news articles are listed here.

### 3.1.4 Training

As a EuroHPC CoE, CEEC will share training opportunities through an embedded instance of the CASTIEL project HPC In Europe training portal, including CFD-related training provided by other CoEs or NCCs. In addition, this page will be used to provide website visitors with access to freely available materials from relevant past training events.

### 3.1.5 Events

The event calendar shows all non-training events, which CEEC members organise or participate in, such as workshop attendance or organization, conference presentations, networking events, or meetings with interest groups.

### 3.1.6 Euro HPC Ecosystem

This page explains and links to related initiatives such as the EuroCC and CASTIEL projects as well as CoEs doing related work in order to present the greater context of CEEC work and how it complements and builds on the work of other European HPC projects.

### 3.1.7 News

In the news section news articles are being published that deal with developments and achievements within the project and explain how these each contribute to the overall project goals. They also serve as general language summaries or explainers for more technical content like publications.

### 3.1.8 Contact

The contact page provides a form that directs messages to the communications and dissemination work package leader, who will then forward queries to the most appropriate project contact.

### 3.1.9 Social Media Presence

The website links directly to the CEEC LinkedIn and Twitter pages via icon implementation in the footer section of the website. The social channels are of vital importance in reaching out to interest groups and raising awareness. Therefore, both the social public channels and the website are visibly linked to each other, as social campaigns and news and event promotions directly link to the website (See Figure 9, Figure 7, and Figure 6).

## 3.2 Tracking and Analytics

In consideration of the General Data Protection Regulation (GDPR) that came into force in May 2018, the CEEC websites and social channels will use web-based tools to evaluate communication effectiveness and optimize outreach accordingly.

### 3.2.1 Search Engine Optimisation

A WordPress plugin has been installed in order to make sure that basic SEO-principles are being considered in each post. With the help of a simple traffic-light-system in the backend of the CMS, SEO-factors such as title length, meta descriptions and redirection are being monitored and evaluated. In accordance with the recommendations given by the SEO plugin, the texts and contents will be adapted.

### 3.2.2 Web-Analytics

The WordPress Plugin Burst Statistics - Privacy-Friendly Analytics for WordPress [5] has been downloaded in order to evaluate the performance of the CEEC website. Functioning without cookies and both anonymizing and locally storing data, the tool is GDPR compliant [6]. Among the relevant metrics it tracks are:

- unique site visitors (2,000 monthly average)
- Bounce-rate
- Referring Domains

These metrics will continuously be tracked to evaluate if KPIs are being met and to take the respective measures in the long-run.

# Conclusion and Future Directions

The visual identity and corporate design of CEEC described above will remain unchanged for the duration of the project and beyond. It will be consequently applied to all support material related to the project such as flyers and other materials for in-person events as detailed in the corporate design manual (**Error! Reference source not found.**).

The initial website content and structure as discussed above will also be maintained and updated throughout the project, as needed. However, as CEEC develops and produces more content, the following pages will be added to the website to meet anticipated needs.

Codes: The five codes being used in the CEEC Lighthouse Cases are widely used and recognized within the CFD community but likely unfamiliar to audiences outside of it. Although the Lighthouse Cases provide an accessible entry point to understanding the impact of CEEC, the true value of the project work will occur at the code level. For these reasons, the website has a landing page for all five codes that link to subpages for each code. Each subpage consists of a description of the code, a short explanation of what makes it unique among other CFD codes, and why it is being used by CEEC. Additionally, each subpage includes a feed of any and all news or blog articles tagged

with that code. In this way, readers from all target groups will be able to learn about each code and immediately see content related to CEEC work on that code.

CFD FAQ: Or, what do all the acronyms mean? With a domain as technically and mathematically demanding as CFD, accessing and understanding progress and successes is a challenge for all but the most involved members of society. Even for these individuals, the ability to communicate their work and its importance can be a challenge. To that end and to maximise the impact of CEEC work, the earlier part of the project runtime will be partially devoted to the creation and dissemination of general language explanations of CFD key terms and concepts. In addition to attracting a broader audience, this will provide the communications and dissemination groundwork for all of the more technically complex content that will be generated later in the project runtime. It can also serve as a reference for other projects in the broader EuroHPC ecosystem that also work on CFD.

In addition, as we will outline in D6.2: "Communication and dissemination plan", CEEC will publish newsletters. These will be archived and publicly readable on a dedicated newsletter page, which will also host the subscription form.

Other dissemination channels of CEEC will also be subject to continuous adaptation, especially as regards any decision to add a channel such as Mastodon or discontinue Twitter in response to platform changes that decrease access to our target audience. However, as part of the overall communication and dissemination strategy, this will be further described in the following deliverable D6.2, which will be submitted in M6 of the project's runtime.

# References

[1] "Oxygen," *Google Fonts*. https://fonts.google.com/specimen/Oxygen (accessed Apr. 25, 2023).

[2] "WebAIM: Contrast Checker." https://webaim.org/resources/contrastchecker/ (accessed Mar. 31, 2023).

[3] "CEEC CoE – Finding solutions to grand challenges at the frontier of computational fluid dynamics." https://ceec-coe.eu/ (accessed Mar. 31, 2023).

[4] "OceanWP - the Only WordPress Theme That Gives You More," Mar. 23, 2021. //oceanwp.org/ (accessed Mar. 31, 2023).

[5] "Home - Burst Statistics," *Burst Statistics*. https://burst-statistics.com/ (accessed Mar. 31, 2023).

[6] Aert, "Why is Burst Privacy-Friendly?," *Burst Statistics*, Dec. 27, 2021. https://burst-statistics.com/why-is-burst-privacy-friendly/ (accessed Mar. 31, 2023).

[7] "CEEC CoE (@CEEC_CoE) / Twitter." https://twitter.com/CEEC_CoE (accessed Mar. 31, 2023).

[8] "Center of Excellence for Exascale CFD: Overview | LinkedIn." https://www.linkedin.com/company/center-of-excellence-for-exascale-cfd/?viewAsMember=true (accessed Mar. 31, 2023).

# Appendix A

# Logo

## Main logo


The main logo includes the letters CEEC as capital letters with a tracking of 170. The three curvy lines above the first C stand for the CFD-lines of the simulations CEEC is developing.
The look of the logo is simple and modern with a solid font and a simple but recognizable illustration.
The Logo without background is recommended to be used when there's no background color given from the other layout.

## Protective frame

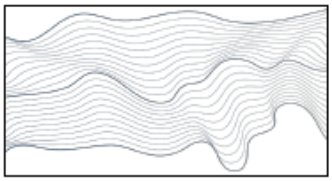

Around the logo needs to be a frame without any other graphic elements or text. This frame is defined by the half of the height of the Logo.

## Logo variations





## CFD-Lines



This illustration of some CFD lines can be used as a creative addition for the background of CEEC-Designs.
The color of the lines can't be changed but it's allowed to transform the size of the illustration to make it fit into the layouts.

# Color range

## Main color

RGB
6/54/75
CMYK
87/51/28/61

The main color of CEEC is a dark bluegreen that is very useful to create a sufficient contrast to the white typography.
The color is very pleasant for the eye as well.

## Secondary colors

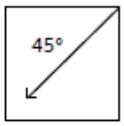
RGB
10/154/148
CMYK
75/9/41/9

RGB
97/131/174
CMYK
64/39/9/7

The bluegreen main color can be expanded by two pastelic colors. They can be used as a transition as you can see below the color codes.
It's a turquoise green and a light blue.

## Color gradient

The two colors can be used either for little details or as background color as a color gradient.
The gradient runs in 45 degrees from the right top corner (blue) to the left bottom corner (green).




A second and mostly more useful gradient is using bluegreen instead of light blue. As in the first gradient, it goes 45 degrees from the right top corner (bluegreen) to the left bottom corner (green).

# Typography

Logo Typo

**Effra CC Black**

Headline

**Oxygen Bold**

Subheader/Slogan

Oxygen Light

Text

Oxygen Regular

Download links
Effra CC: https://fonts.adobe.com/fonts/effra-cc
Oxygen family: https://fonts.google.com/download?family=Oxygen

The Effra CC Black is a very modern sans serif font from the Effra CC font family. The typeface „Black" gives the font a very strong and solid character that represents the technnological reliabilityof CEEC.
Effra CC Black is only used in the Logo.

For all the other text of CEEC the font family of Oxygen is recommended to use. It's also a sans serif font with a more simple but still modern look that appears not intrusive or emotional.
The typefaces that are recommended to use are bold for headlines, light for subheaders or slogans and regular for the standard text.

## Slogan

„Centre of Excellence in Exascale CFD“






5

# Social Media

**Profile picture LinkedIn & Twitter (400x400px)**




**Cover banner LinkedIn (1128x191px)**

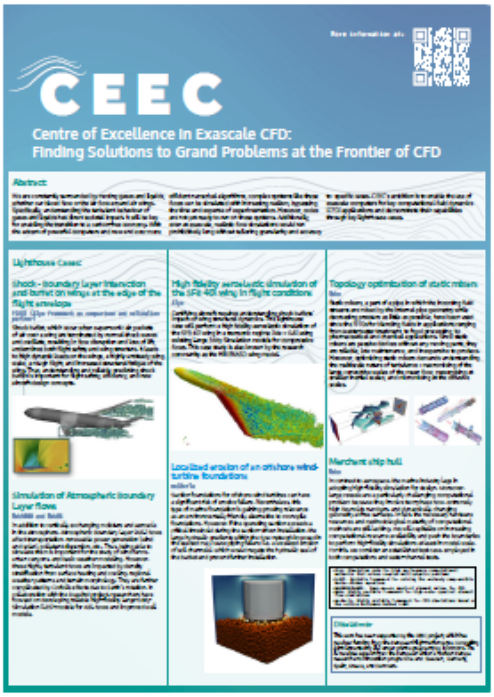



**Cover banner Twitter (1500x500px)**



# Print

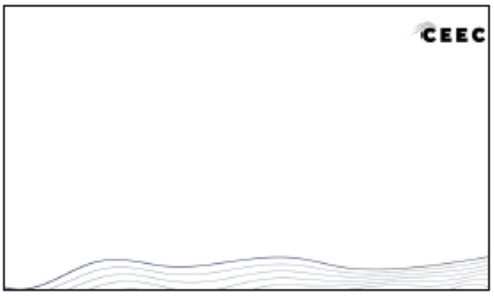
## Poster




## Bookmark

# MS Word and Powerpoint

## Powerpoint slides



## Word page