

Accelerate your capability by exploiting our strengths

From our roots in Cambridge University Engineering Department, and drawing on over a decade's worth of working in close collaboration with the aero-space and automotive sectors, CFS has both the technical knowledge and industrial experience to provide value-added capability to your process.

Every organisation's needs are unique

Whether it is our software product BoXer, a consultancy requirement or a more intense collaboration, CFS aims to satisfy your specific objectives. Only by understanding and fulfilling your needs, will we develop a successful and fruitful partnership.

What is a CFS Partnership?

A CFS Partnership is how you access the leading edge technology developed by CFS to satisfy your specific requirements. As well as obtaining customised versions of CFS products, your organisation obtains an inside track on CFS technical development and access to turnkey development resources, thus gaining a significant commercial advantage compared to simply utilising generic COTS products.

Satisfying your changing requirements

Building and sustaining a long term partnership with your organisation is a fundamental tenet of CFS. As such we offer a range of partnerships from industry-standard licensing of our products as a straightforward introduction to our technology, to a more intense collaboration partnership, providing tailored solutions.

Quality tailored solutions

Understanding your needs is the first step to CFS providing the solutions you want. Annually CFS and your organisation sets out and agrees the new objectives that the partnership will achieve in the short, medium and long term.

CFS then directs internal product development goals to satisfy your aims, reporting progress at regular intervals and providing updates on products to your organisation.

Essential feedback is solicited from your team on updates and progress, which is then utilised to further refine your customised CFS product. Simultaneously, CFS personnel are interacting within your organisation, fulfilling any additional short term requirements and providing expertise and training.

An affordable solution using customised off-the-shelf CFS products

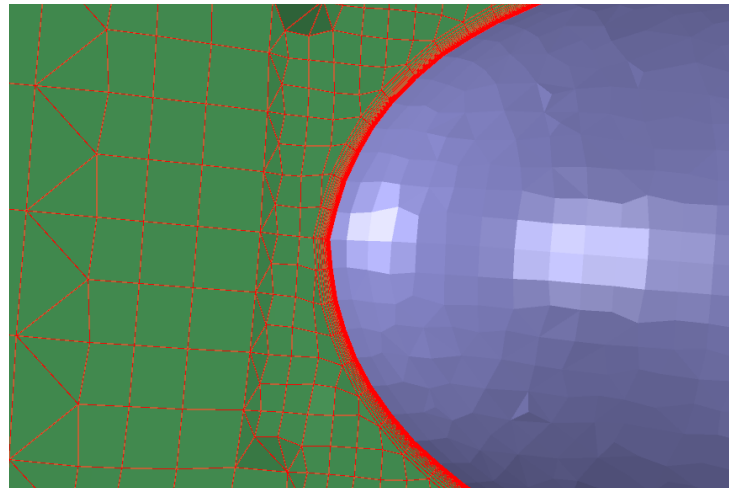
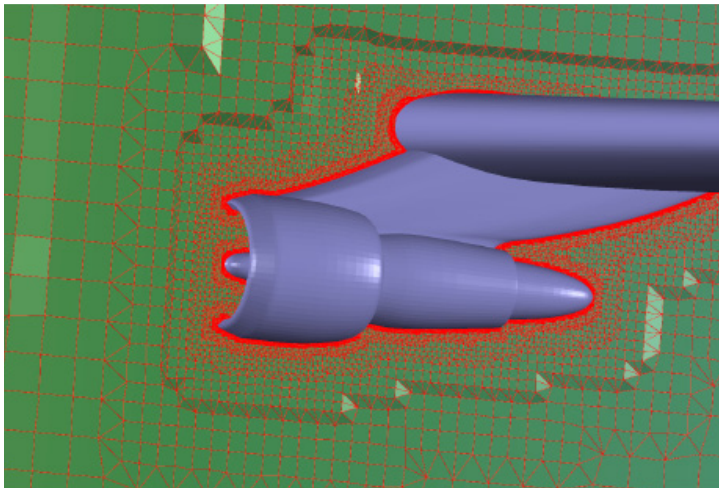
Generating one-off solutions for your needs is prohibitively expensive both in cost and in delivery time-scales. Adapting and customising our core CFS products to fulfill your specific requirements not only is substantially more affordable, but will provide the product you need in a much shorter time-scale. Working with our range of clients allows CFS to leverage product development from different industrial sectors, providing you with software far more effectively than either bespoke or in-house produced code.

CFS Partnerships - suited to your needs

To best fit your needs and budget CFS offers three types of partnerships, each one focused towards differing requirements and expectations:

A **Development Partnership** represents full engagement of CFS personnel with your organisation, forming closely coupled teams (for example embedding CFS personnel at partner sites) sharing common aims, interests and goals. This intensive collaboration is typically resourced in the range of 2-4 CFS person-years per calendar year and with a 2-3 year funding horizon set against an evolving strategic plan. Your organisation benefits from full access to all source code and unlimited user/seat/site licensing within your own immediate organisation. Once your primary goals have been achieved





a less intense interaction with CFS may suit your organisational requirements, CFS provides a range of transition packages that provide full support and maintenance with varying levels of agreed interaction.

An **Application Partnership** represents an intermediate level of engagement. Your organisation gets access to customised source code specifically developed for the partnership to satisfy your requirements, with CFS core software provided via binaries. This interactive partnership is nominally resourced in the ½-1 CFS person-year range with typically a 1-2 year funding horizon. Application Partners benefit from access to free binary software for the duration of the partnership – and a 50% discount for two years beyond.

A **Licensing Partnership** represents a more traditional model of annually licensed, supported software, usually our Boxer product – with opportunity for feedback into development plans via an annual Users' Group and standard product support. This model recognises that PC clusters and multi-core CPUs are a growing reality and is based on a fee structure which encourages, rather than penalises, large parallel computing resources.

Intellectual Property (IP)

Central to our business model, CFS retains ownership of the core IP. This allows your organisation to gain from sharing and spreading of the maintenance and development costs across various funding sources, whilst giving you access to the core IP and ownership of customised or bespoke IP depending on the type of partnership.

Getting started

Mature Development Partnerships already exist for our flagship product line Boxer – both as a mesh generator/geometry engine and as a rapid prototyping flow solver.

We recommend that a pilot project is a successful mechanism for setting up and entering a partnership. The pilot gives you a tangible capability, whilst allowing you the opportunity to evaluate both CFS and its products by demonstrating the strength of both our technology and expertise and how this partnership relationship will benefit you.

Boxer

Boxer is ideal for massively complex meshing problems which require full parallelisation for speed and practicability, and also additional

functionality such as variable surface-mesh resolution. Boxer is fully parallel, across both the geometry engine and mesh generation.

- Direct import of industry-standard CAD formats – with the ability to maintain CAD attributes for meshing boundary conditions.
- Graphical User Interface – enabling rapid creation and visualisation of meshes (Windows and Linux variants).
- Fully scriptable meshing kernel for automated meshing (eg during optimization).
- Turbomachinery-style periodic meshes.
- Thin and zero thickness meshing.
- Cylindrical polar mesh capability for turbomachinery mesh generation applications.
- Fully parallelised and hardware-scalable geometry kernel and mesh generator.
- Variable-depth octree enabling variable surface mesh resolution which can be set by region.
- Near-wall structured layers for boundary layer resolution.
- Recommended hardware:
 - » Linux, Intel or AMD, 32-bit or 64-bit.
 - » Multiple or single CPU-core nodes, ethernet or Infiniband interconnect, distributed or shared memory.

A product is only as good as the support and documentation provided

Documentation is available for Boxer, along with a sample suite of tutorials illustrating realistic technical case studies. Various levels of support are available, (including on-site training). A reduced-cost no-support model is also available to suit, for example, academic users.

Can I upgrade or change my software?

Upgrades of software are automatically available to all licensees, as and when released by CFS.

How does the software licensing work?

CFS has a proprietary licensing software system called “CLICKS”. This works in a similar way to FLEXlm® but provides a significant increase in software security and simplicity for the end user. All CFS software requires simple configuration of a license server node; a single-seat CFS license (or multiple seats) can be served from this node to any other client machine (including the server node itself).