



# User Guide

Version 1, August 2023



**I4Excellence**

Inspire, Involve, Improve, Innovate

# Why Flatapult®?

Flatapult® was developed from years of positive experience with hands-on problem-based learning exercises in classroom training programmes for engineering, manufacturing, quality, Lean and CI.

## The Challenge

These valuable learning benefits were challenged by the transition of learning delivery from physical classrooms to remote 'virtual' training delivery, initiated as a result of the Covid-19 global pandemic. How could we maintain these valuable learning experiences? How can we continue to connect with 'hands-on' learners? Digital simulations are impressive, but typically expensive, and yet the learner remains detached from reality and a fully 'hands-on' experience.

## Development of Flatapult®

Flatapult® was conceived to address the challenge described above – a low-cost, flat-pack learning aid that could be distributed cost effectively by post. It was sketched out in concept, then developed into a 3-dimensional designs, and physical models before final design.

Developing the product, brand, and supporting material also became a hands-on learning experience for my teenage children during school holidays and weekends – what better work experience than to develop, test, protect, manufacture and market a product or service?

We hope this combined product and supporting resources offer you a highly engaging learning experience – as learner or instructor.

Steve Fannon, Director & Founder, I4Excellence Ltd.

This document is copyright ©I4Excellence Ltd, August 2023. Any use or distribution must be with written agreement of the copyright owner.

Flatapult is a Registered Design (No. 6243236), Flatapult® is a registered trademark (No. UK00003928790) of I4Excellence Ltd.

# Contents

Introduction .....	4
What's in the Box? .....	5
Construction .....	5
Safe Operation.....	<b>Error! Bookmark not defined.</b>
Measuring Performance of your Flatapult® .....	<b>Error! Bookmark not defined.</b>
Changing the Performance of your Flatapult® .....	<b>Error! Bookmark not defined.</b>
Available Exercises .....	<b>Error! Bookmark not defined.</b>
Exercise 1.....	<b>Error! Bookmark not defined.</b>
Getting Started – Studying variability .....	<b>Error! Bookmark not defined.</b>
Exercise 2. ....	<b>Error! Bookmark not defined.</b>
Gaining Stability – Standard Operating Procedures.....	<b>Error! Bookmark not defined.</b>

# Introduction

Flatapult® enables hands-on experience of process, measurement, variation, experimentation for learning programmes in science, engineering, quality and Lean Six Sigma.

As a low cost, easily shipped, sustainable product, Flatapult® can be incorporated into classroom, virtual and e-learning programmes, given away to learners as part of the learning package. This allows learners to participate in interactive 'learning by doing' activities throughout their training and allows continued exploration of methods and tools beyond the classroom.

As a combined product and service, Flatapult® also provides access to learning exercises and challenges, designed for use with Flatapult® hardware and hosted on our website – just point your learners to the challenge and set them free.

To see the Flatapult® in full action, follow the QR code:



<https://youtu.be/r8Loe7Jc8tl>

# What's in the Box?

Inside the Flatapult® packaging, there are:

- 2 side panels
- 2 main arms
- 1 cross cup
- 2 cups
- 4 connectors
- 4 wooden bushes
- 3 washers
- 1 coach bolt
- 1 wing nut
- 1 main arm propulsion bands
- 1 arm cup retaining band



## Construction

Construction of the Flatapult® is guided by a short video – this is imperfect, therefore development of your own instructions as a 'Standard Operating Procedure' could be a useful initial training exercise.

To view the full step-by-step construction video, scan the QR code:



<https://youtu.be/Ke9N2J3MzO8>

## End of Preview

This document is just a short preview of the User Guide. Follow the link below to request a copy of the complete Flatapult® User Guide.

**Request the Full  
Flatapult® User Guide**