Touch Inside the Box®

Digital devices are great, we make them even better.

Introducing M-Axis - an innovative way to interact.

MAXIS by LumiStream

MAXIMUM CONTROL

Contents

The Problem

Touch-screen devices are convenient, fast and easy to use – if they work as intended.

1. While using touch-screens, users are usually unable to see the target location, due to finger obstruction.

2. Control of content in the Z-Axis has previously been achieved by physically depressing on screen layers with fingers or a stylus. These kind of devices tend to be heavier and not as intuitive. Yet without this option, the manipulation of digital and 3D content can be difficult.

The Solution

M-AXIS
MAXIMUM CONTROL

Pre-Touch Off-Set Cursor System
The M-Axis Cursor System uses an off-set pointer. It is visible when fingers are close to the touch-screen device and assists with device control.

Cursor Design
The Cursor is what users see when their fingers approach the screen. LumiStream has designed several configurations that can be varied according to the application, or branded according to manufacturer.

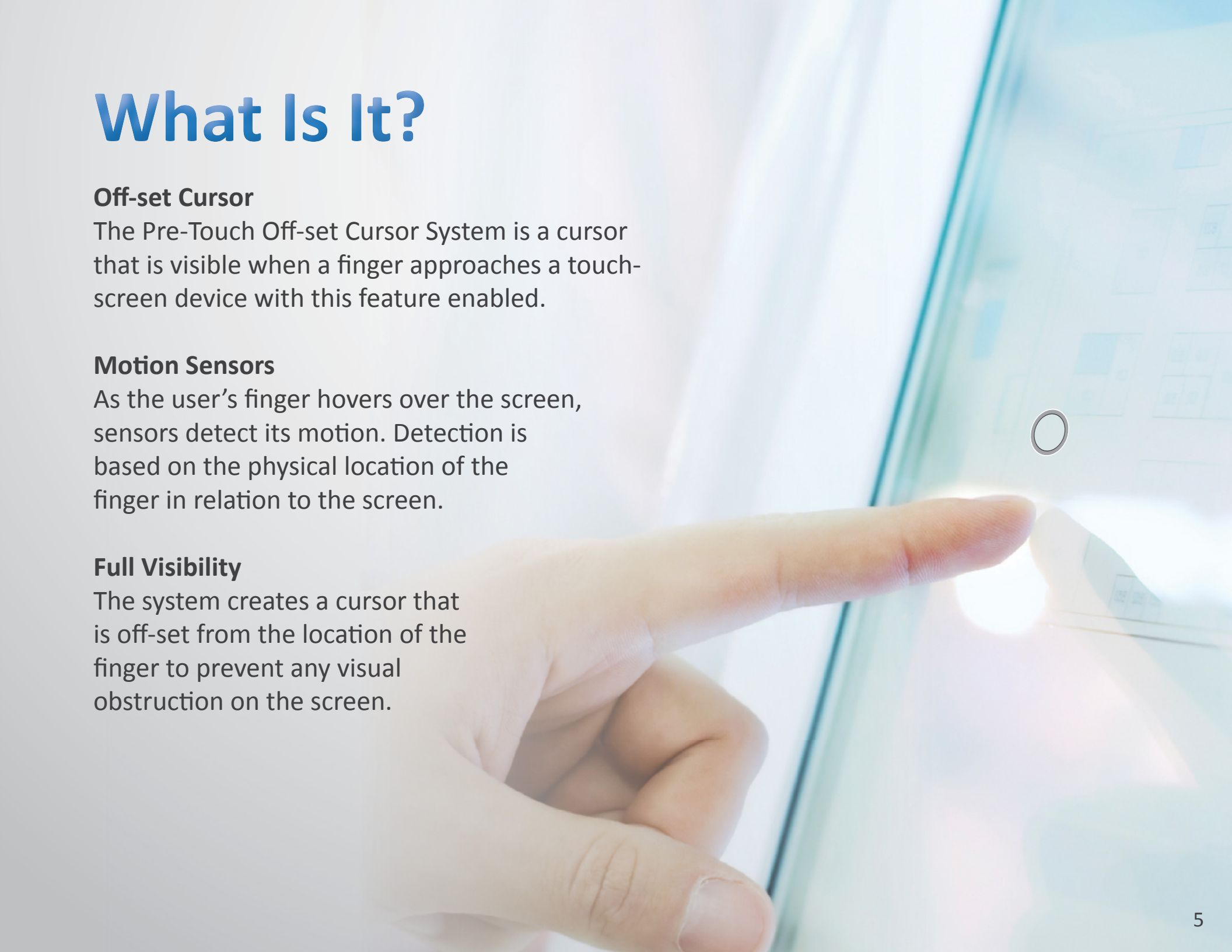
Pressure Simulation System Using Finger Surface Area
The Pressure Simulation System uses the surface area of fingers on touch-screen devices as a means to manipulate digital objects, content, and navigate 3D space. The surface area of a finger in contact with a touch-screen changes according to how light or hard the user presses on the touch-screen surface.

What Is It?

Off-set Cursor
The Pre-Touch Off-set Cursor System is a cursor that is visible when a finger approaches a touch-screen device with this feature enabled.

Motion Sensors
As the user's finger hovers over the screen, sensors detect its motion. Detection is based on the physical location of the finger in relation to the screen.

Full Visibility
The system creates a cursor that is off-set from the location of the finger to prevent any visual obstruction on the screen.



How Does It Work?

Detection

1. A finger is detected as it approaches the touch-screen and before it makes contact.

2. When the finger gets to a certain distance above the screen, the off-set cursor becomes visible.

3. When the finger makes contact, the location of the cursor stays the same but it could fade from sight - to prevent obstruction.

NOTE: The bottom 10% of the screen could use standard touch capabilities depending on the manufacturing process.

Capabilities

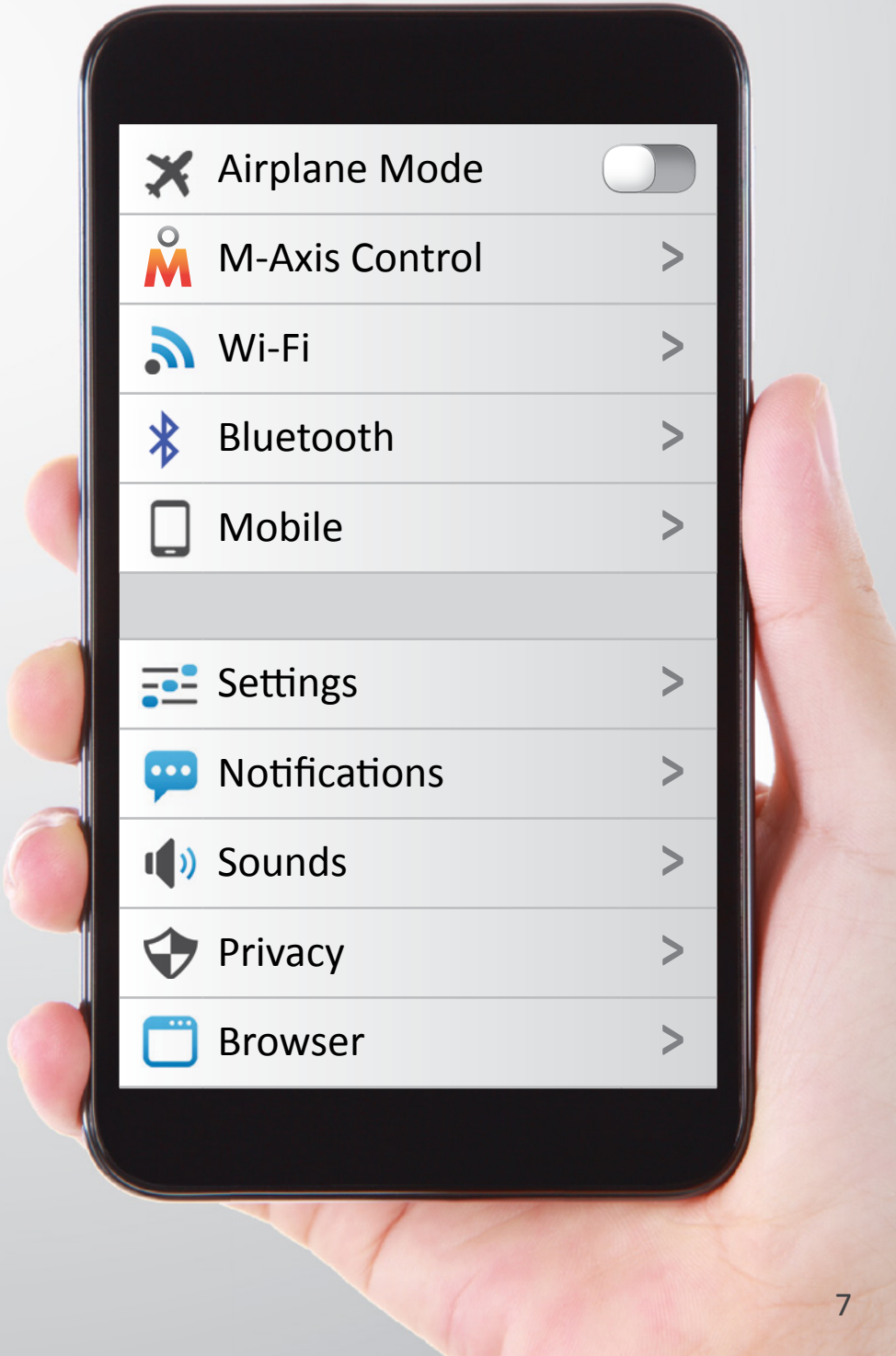
The M-Axis cursor system properties can also be changed depending on the application.

M-Axis Settings

Configuration
M-Axis can be easily enabled from the device settings menu, including which applications would use the cursor system.

Application List
Many applications could take advantage of the system, like technical, web browsing and creative software.

The system could be automatically turned off for typing and some GUI navigation.



Technical Applications

Fine accuracy tends to be unachievable with standard touch-screen devices.

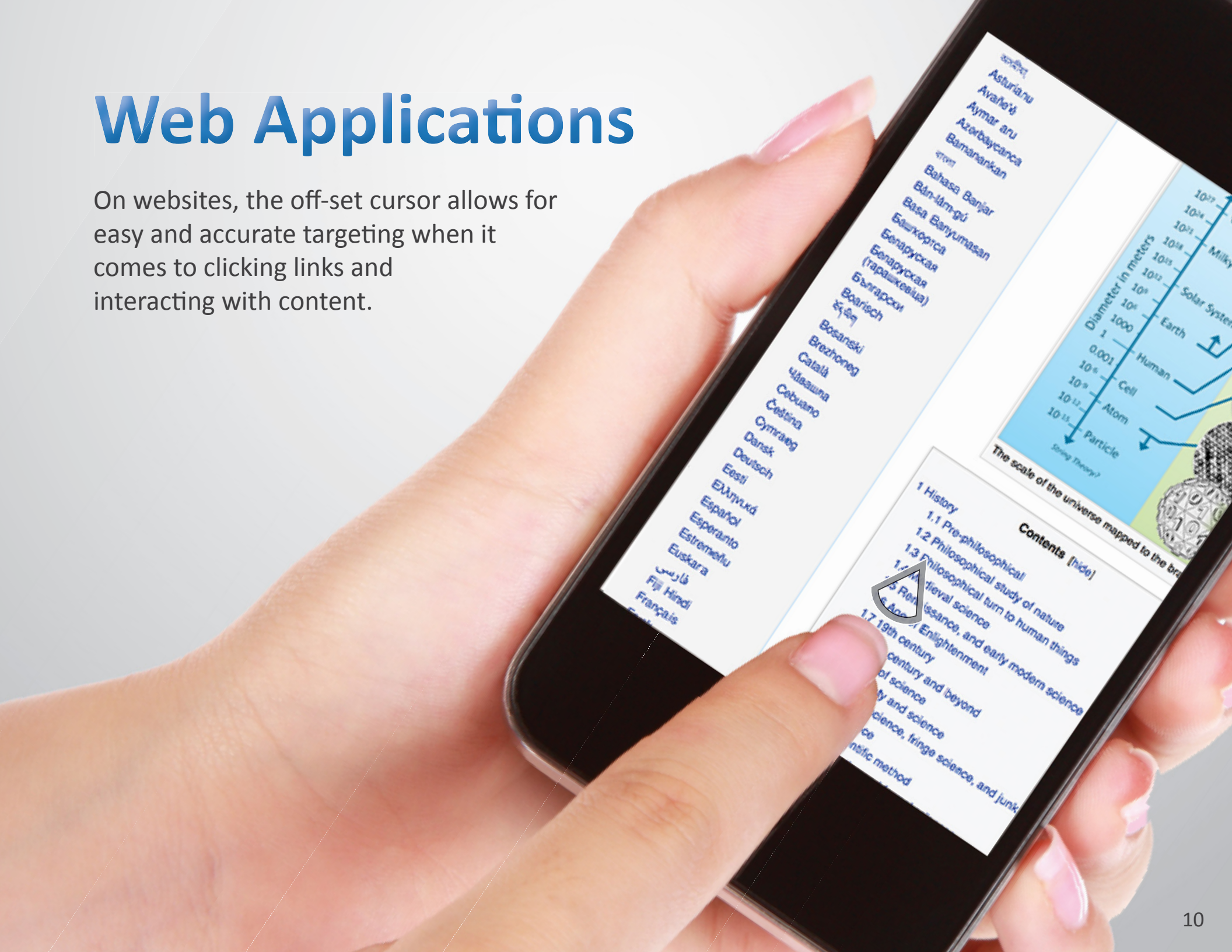
The M-Axis off-set pointer system gives users the ability to interact with precision - while the optional Z-Axis pressure simulation provides an extra layer of interaction in a third dimension. In this example, it could be used to zoom into a graph.

Creative Applications

The **M-Axis** off-set pointer system gives users the ability to make digital art with precision.

Web Applications

On websites, the off-set cursor allows for easy and accurate targeting when it comes to clicking links and interacting with content.



Map Applications

Similar to data entry, the off-set pointer lets users make precise selections on touch-screen devices when navigating map applications.

Data Entry Applications

Many applications call for some form of data entry. The off-set cursor system enables very specific targeting, right down to the size of a pin, thereby reducing errors.

Entertainment Applications

The M-Axis system is perfectly suited for entertainment applications with touch-screen devices. The off-set cursor system makes it easier to select the intended location while the Z-Axis dimension navigation provides an extra input for interaction with digital content.

It could also be used for games - some might call it cheating...

Key Benefits

Precise Targeting
The M-Axis off-set cursor allows users to see the exact target location when making contact on touch-screen devices.

Improved Visibility
The closer a user's finger gets to the touch-screen, the smaller the cursor becomes and when the finger makes contact, it could fade away - to prevent obstruction.

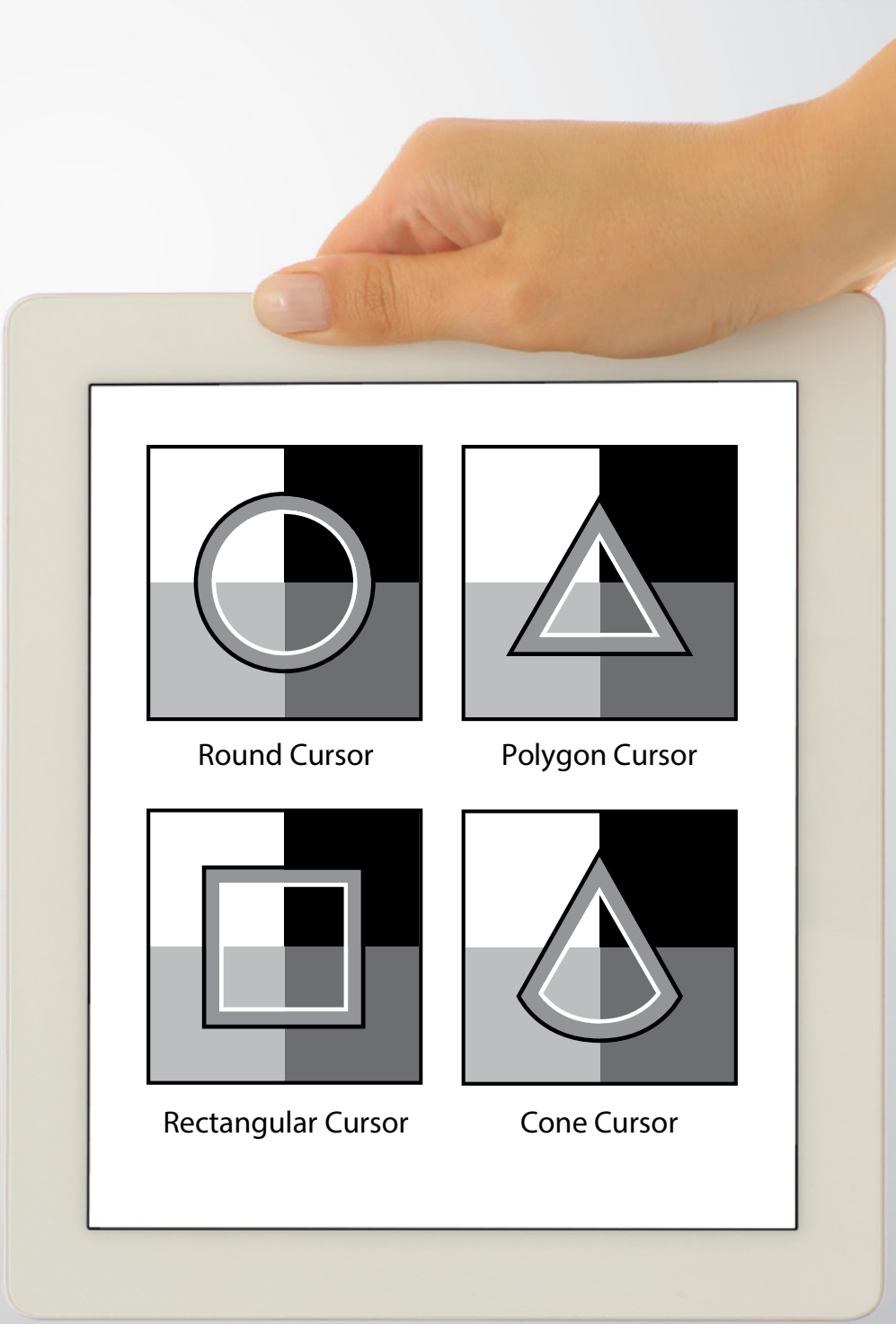
Better Interaction
The off-set cursor provides the foundation for a more precise user experience, by drastically reducing errors and preventing unnecessary visual obstruction.

Cursor Options

M-Axis Cursors are developed specifically for the Pre-Touch Off-Set System. The cursors are what users see as fingers approach touch-screen devices.

Shape Options
Our Cursor Design System is available in a number of shapes including a circle, triangle, square and cone - providing options depending on the application.

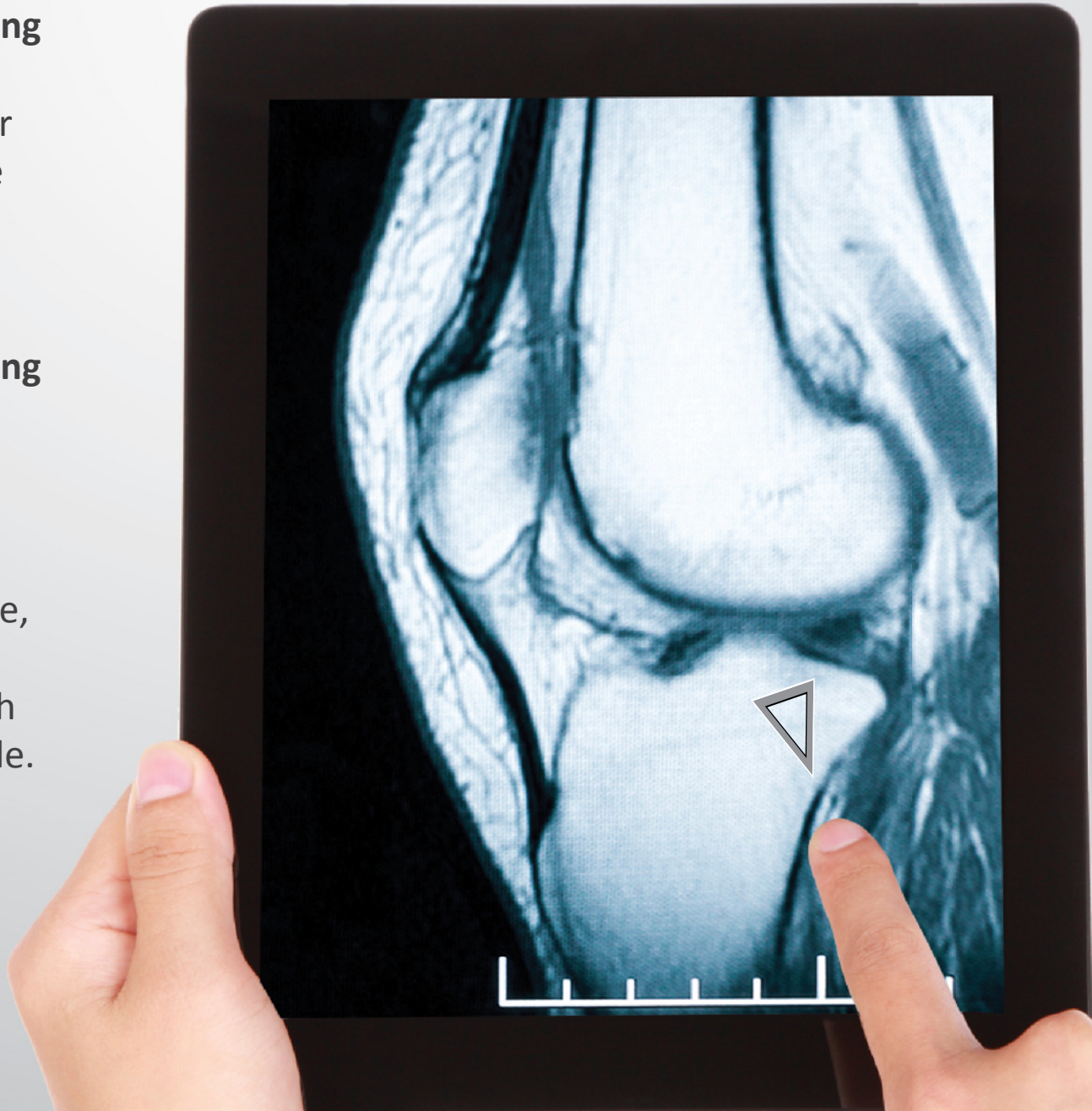
Design
The cursors are designed specifically with light and dark areas to provide the best visibility depending on the application and background.



Cursor Applications

Different Shapes Depending on the Application
The flexibility of our cursor design allows for a change in shape according to the application in use.

Different Shapes Depending on the Manufacturer
Alternatively, we could provide cursor options to different manufacturers, this way, the circle, triangle, square or cone, would be branded to their GUI - with variations of color and style.



Pressure Simulation System

What Is It?
The Pressure Simulation System detects finger contact with a touch-screen - analyzing the surface area change as an extra input.

Light and Hard

1. Light touch of fingers have a small surface area.

2. Hard touch of fingers have a larger surface area.

Methods for Various Purposes
Pressure detection can be used to manipulate digital objects and content on a touch-screen device, and to navigate through virtual 3D space.

Less pressure

More pressure

How Does It Work?

Technology
The pressure simulation touch-screen sensors detect finger contact area.

Increasing and Decreasing Contact Area
As finger pressure increases, more of the finger's surface area comes into contact with the touch-screen, which means more areas on the screen contact the finger. This information is then interpreted by the system as an increase in pressure. When the finger decreases pressure on the touch-screen, fewer areas detect the finger's presence. This information is interpreted by the system as a decrease in pressure.

Flexible Configuration
The system used to detect contact can consist of squares, circles or any polygon that can fit the touch-screen device.

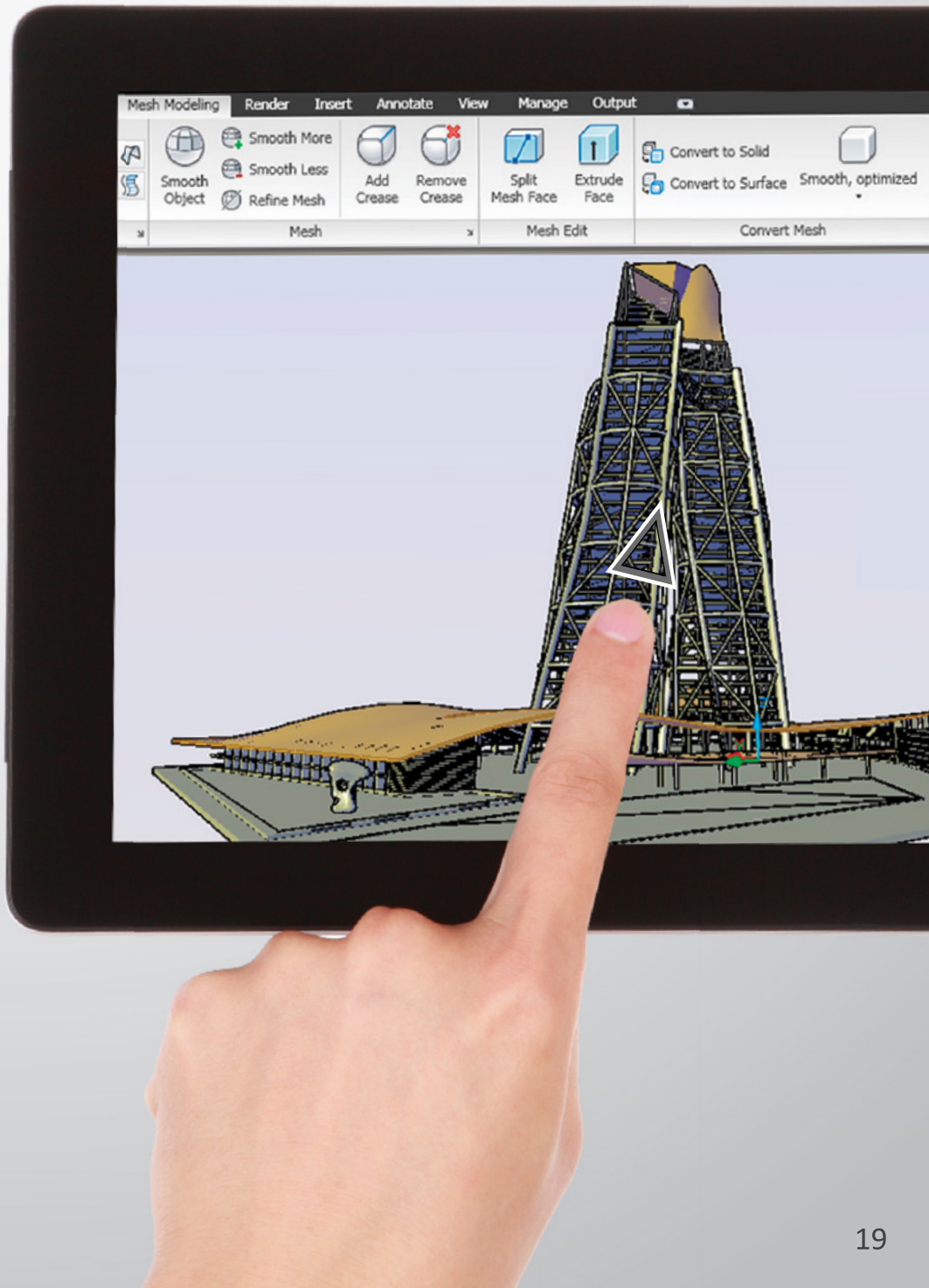
Specifics

Manipulating Digital Content
Using pressure through fingertips, users can manipulate digital content on any touch-screen device. This interaction could act as an extra input, besides the X and Y axis.

Navigating Virtual 3D Space
Anytime movement along the Z-axis is required, the Pressure Simulation System can be used to perform various tasks, including navigating through applications.

Interacting in Virtual Environments
The system can be used to control movement in 3D virtual space.

For example, an increase in finger contact area could move faster and a decrease slow down.

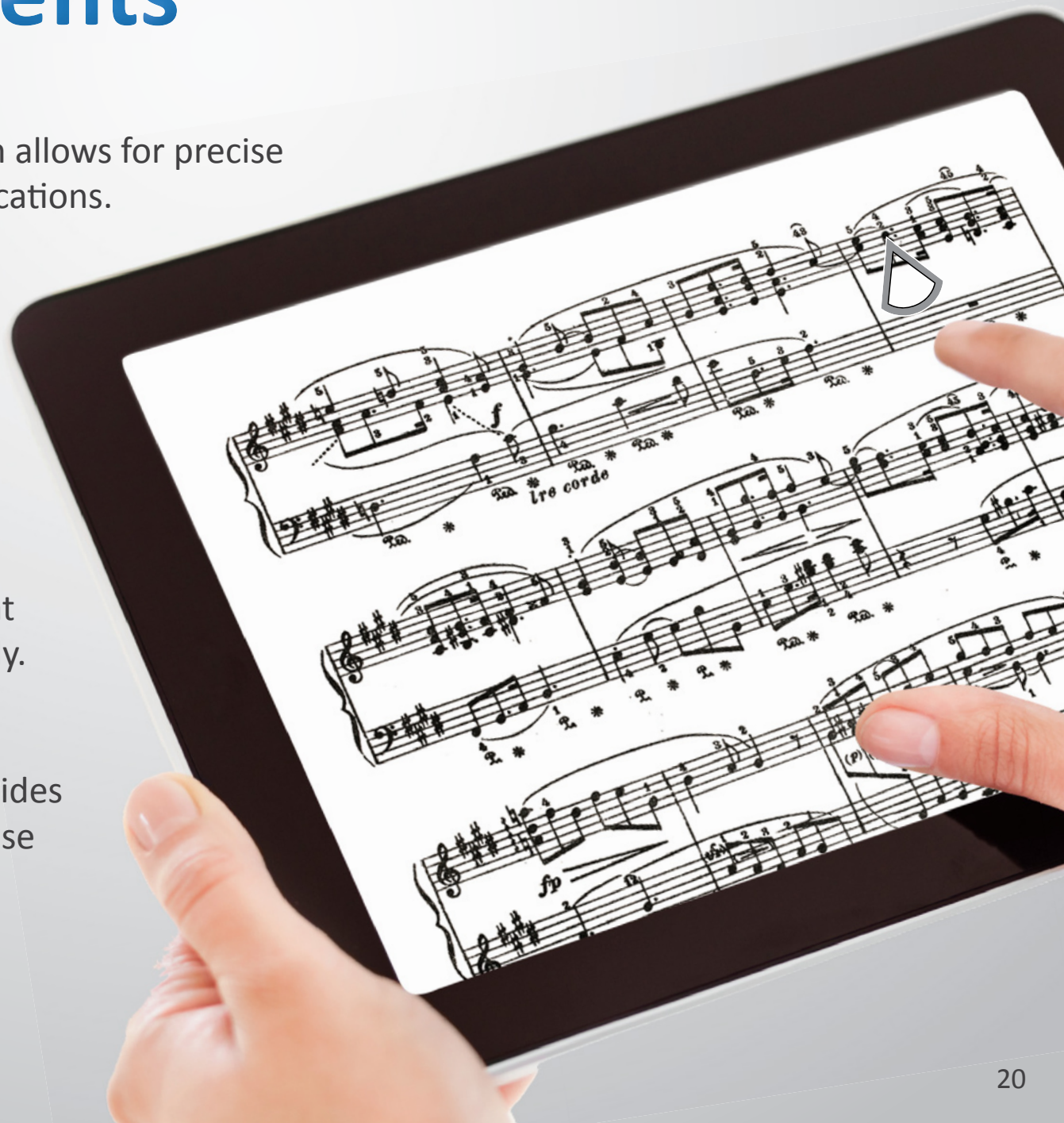


System Benefits

Precise Control
The Pressure Simulation System allows for precise control in a wide range of applications.

No Need for Additional Hardware
Because the system detects pressure using technology that reads the amount of surface area in contact with a user's finger, there is no need for any additional hardware that would be manipulated physically.

Better Interaction
The M-Axis control system provides the foundation for a more precise user experience by drastically reducing errors and preventing unnecessary obstructions.



About LumiStream

A Creator and Innovator
We use our technological experience and expertise to push the boundaries of conventional standards. Our systems build on current technologies, improve functionality and enhance the user experience.

Solid Foundations
Our company is rooted in the ability to recognize a problem and then innovate, create and build to solve it. As a cohesive team, we work together to develop proprietary hardware and software that improves usability across a wide range of applications.

Benefits to Manufacturers

Seamless Integration
The pre-touch pointer, cursor design and pressure simulator are easily integrated into existing systems and devices. Designed with a strong focus on compatibility, our systems work well with third party programs and hardware.

Better, More Broad Use of Touch-Screen Devices
When it comes to specialized use, touch-screen devices can be limited in their capabilities.
Our systems change that. By improving performance and user experience, touch-screen devices can expand their scope in the marketplace.

Customizations
We are flexible and accommodating. Our systems can be customized in order to better suit your purposes, needs and existing devices.

Innovation in Motion

Better Experience, Function and Performance.

Whether you want to integrate LumiStream systems into your existing devices and infrastructure, or are looking for the perfect technological investment, we want a partner like you.

Contact us at 1-888-815-5983 or Info@LumiStream.com