



## **Kinetic Doorway™ video explorer with Spin Browser™ dial (KD+SB) Purchase, Production, and Pricing Options**

(Last updated 6/28/10)

*(If you just want ballpark pricing, without the prior context, please skip to page 8.)*

### **Links to additional information**

1. Overview page <http://www.technofrolics.com/trade-show-exhibits-museum-exhibits/video-spinbrowser/video-spin-overview.html>.
2. Features and Advantages document, including many supporting client quotes, installation photos, complete feature list, and more <http://www.technofrolics.com/SpinBrowserTM-FeaturesAndAdvantages.pdf>.
3. Data filtering applications geared towards the research market, [www.temporalinnovations.com](http://www.temporalinnovations.com).
4. A 5 minute TF promo Flash video, 2 minutes of which shows the KD+SB system in action <http://www.technofrolics.com/video/flashvideo.html>.
5. Page introducing live capture <http://www.technofrolics.com/SpinBrowser/realtime/index.html>.
6. Document providing video and audio technical format notes for video producers <http://technofrolics.com/SBVE-VideoProducerInfo.pdf>.
7. Document discussing aesthetic issues surrounding video production for the KD+SB system, and listing some of TF's stock offerings <http://technofrolics.com/SBVE-ContentInfo.pdf>.
8. Information on our free demo unit <http://www.technofrolics.com/touringspin>.
9. **TechnoFrolics Contact:** David Durlach, Director and Founder, email [david@technofrolics.com](mailto:david@technofrolics.com), phone 617-441-8870.

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# Introduction

## ***Clarifying what comprises TF's KD+SB system***

At its core, it is a sophisticated, patented software environment that allows unparallel fluidity, flexibility, and dynamic data filtering, when moving through video content within live, interactive contexts.

While the elegant, precision, and ultra-rugged stainless steel dial is the “face” of the majority (though not all) incarnations of the system, it is within the software<sup>1</sup>, over 10 years in development, where the bulk of the value lies.

Thus, the predominance of the system cost (for small volume purchases) is for the software, combined with TechnoFrolics' 24x7x365 support, and creative/technical assistance before and after the project's completion, rather than simply for the bare dial hardware. This clarification is provided to correct some people's misperception that what comprises TF's KD+SB system is substantially the dial, with the software being (say) just some simple Flash<sup>2</sup> application.

For additional information on our system's features and advantages, along with many supporting quotes, installation photos, partial client list, etc., we strongly encourage reading <http://www.technofrolics.com/SpinBrowserTM-FeaturesAndAdvantages.pdf>.

## ***Diversity of projects, clients, and utilized system features***

The types of clients that employ the KD+SB technology, the content presented, and the context in which the system is used, all have become progressively more diverse over time. One month a small children's museum will create an installation with just a few minutes of content and using their own computer, while the next a large institution will contract us to create a turnkey live capture system, with \$10,000 high-speed camera, terabyte sized capture files and automated nightly backup, etc.

Also, because the sophistication and power of our system has increased dramatically, we are finding that while some clients want to use all it has to offer plus custom additions, others employ only a tiny fraction of its features. In addition, some clients use the system only a couple of times per year at conferences, while others run permanent installations 24x7x365.

And finally, certain clients wish us to provide consulting throughout the project, archive their content offsite permanently, and be systems integrators and point-of-contact help throughout the life of the exhibit, while others wish us to simply provide our software and hardware as one of many technology components needing integration.

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<sup>1</sup> A multi-threaded, highly optimized, C++ application.

<sup>2</sup> As a side note, Flash in particular has nowhere near the performance required – even if one were to put in the enormous development effort required to instantiate all the Kinetic Doorway's built in features.

## ***Our response***

Because of this diversity of needs, varying by well over a factor of ten in technical sophistication and budget, we have chosen to replace our stock table-based price list, with completely custom quotes.

Going further, we are open to two quite different methods of arriving at a final cost and deliverables document. One way is for clients to tell us what they need, and we will prepare a custom recommendation and quote. The second way is for clients to tell us their budget, and we will then tell them what we recommend and can provide for that amount.

Our goal in doing this is simultaneously to:

1. Help clients choose what system features and relationship with us best suits their needs.
2. Adjust to their budget.
3. Charge an amount that will allow us to properly support our installed systems into the future, and continue to enhance the capabilities of the unique KD+SB environment.

Note that we also rent and lease our systems, as well as offering them for sale.

## **Basic Components & Services<sup>3</sup>**

### ***Software<sup>4</sup>***

1. Operating System (Windows XP, Vista, or Windows 7)<sup>5</sup>.
2. **Kinetic Doorway video explorer with USB software license key.**
3. Optional:
  - a. **Custom application/client-specific modifications.**

### ***Hardware***

1. Computer (PC<sup>6</sup>).
2. Display (LCD or CRT monitor, projector, etc.).
3. Surge-suppressed, filtered, power strip.
4. Cabinetry.
5. Optional:

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<sup>3</sup> Items in **bold** must be provided by TF. Remaining items may be provided by us or 3<sup>rd</sup> parties.

<sup>4</sup> Note that by “software”, we mean code – e.g., operating system, Kinetic Doorway application, etc. We do *not* include video/graphic content, as some media producers do when using the term.

<sup>5</sup> Live capture not tested yet under Windows 7.

<sup>6</sup> Mac OS is not supported, but Macs booting into Windows can, for certain types of installations, be used.

- a. **Spin Browser dial (dome or panel mount), along with encoder, electronics/cabling to connect it to the computer, and static grounding cable for dial.**
- b. Buttons, button-lights, etc.
- c. Custom user interface hardware (pressure pads, light sensors, etc.).
- d. UPS (Uninterruptible Power Supply).

## Dome vs. panel mount user interface

Panel mount dials are used by most clients who build their own cabinetry. In contrast, the dome dial is used most in rental situations and other short-duration events. That said, perhaps 40% of permanent installations also choose the dome interface for its elegant look, and the ease with which it may be bolted to any surface.



## Content

1. Video:
  - a. Custom shooting, stock content acquisition, or both. (Stills and video may be used.)
  - b. Editing.
2. Optional:
  - a. Graphic content overlays as narrative, table-of-contents, progress bar, or the like.
  - b. Audio, as either region-based overlay, or in synchro-lock.

## Services

1. Configuring computer in terms of OS tweaks, installation of 3<sup>rd</sup> party applications and drivers, enabling autostart on power up, etc.
2. Formatting video and optional graphics and/or audio overlay content to function properly within the Kinetic Doorway environment.

3. Creating the Attract sequence - typically an engaging temporal path through content to catch visitors' attention, and that is entered after a pre-defined period of time (usually 20 seconds) of no user activity.
4. Backup and permanent archiving of:
  - a. Kinetic Doorway software with all configuration files.
  - b. Video, graphic, and audio content.
  - c. Operating system with custom configurations.
5. Installation of system at site location.

## ***Warranty***

TF's standard warranty on its dial and all connective electronics is 5 years.

## ***Documentation***

TF offers a variety of comprehensive documentation on software and hardware elements.

# **Turn-key or Not? What to request from TF**

## ***Overview & background***

TF can, within broad limits, provide as little or as much of the "Basic Components & Services" listed above as desired. At a minimum, TF must provide the Kinetic Doorway application software and, unless a custom physical interface is produced, Spin Browser dial, encoder, and connective electronics. On the other end, TF can produce, deliver and install, a complete Turnkey system, including creating the video, cabinetry, etc.

## ***Who supplies what - Pros, cons and related issues***

### **The screen/projector, casework, and install**

In most cases, it is best that the client or third party provide these items. This is because, in most circumstances:

1. The client already has a working relationship with a designer/fabricator/AV systems integrator, who is local and/or is creating and installing many exhibits at the same time with a common casework appearance (of which the KD+SB is one).
2. Screens/projectors vary widely in cost (mostly as a function of size/brightness) from \$250 - \$50,000, with typical costs in the \$700-\$7000 range. Because of this large range, clients often make their decision based on budget constraints, without needing significant input from TF.

3. The cost of individually crating and shipping casework and screens (as opposed to bundling as part of a large truckload of exhibits, or in the case of the screens, being shipped directly from the manufacturer) can be expensive.
4. Unless complex custom functionality and hardware is involved, the KD+SB install is straightforward, so paying for TF staff to install systems is rarely appropriate.

## **The computer, and software install**

If the configuration is relatively straightforward, we recommend that others provide the computer, that it never come through TF, and that software install be jointly performed by others (for the “generic” elements) and TF (for the KD+SB specific elements) via remote logon. We generally find this the simplest and most cost effective.

In cases of ultra high resolution, multi-screen HD formats, productions over 10 hours in length, and/or complex realtime capture systems, the hardware and configuration required to achieve smooth, trouble-free performance is sufficiently specialized that we normally recommended TF purchase the computer and configure and test the software and hardware in our shop.

(For simple projects with only a few minutes of up to 720p HD content, virtually any Windows machine should be sufficient. We recommend Windows XP<sup>7</sup> 32 bit,<sup>8</sup> an Intel CPU<sup>9</sup>, RS232 DB9 serial port, and ECC memory.

*If you do supply the computer from your end, please be sure to contact us before equipment purchase in order that we may discuss detailed hardware requirements as relates to your project.)*

## **The video**

Whether TF should research, acquire, and produce the video (from TF stock or outside custom sources, custom-filmed or licensed), or receive it in final form from the client/designer/producer, is largely dependent upon a particular project's details. Please contact us to discuss yours.

In any event, TF should advise the video producer, as there are a number of aesthetic aspects related to producing for the KD+SB system that are quite different from producing for broadcast or conventional touch screen systems (one of which being *dramatically* longer clip lengths).

HD (High Definition) or SD (Standard Def)? Because the cost of deploying HD is becoming less and less on all fronts - filming, editing, TF's fee, etc. - it is strongly recommended that an HD system be used. Natively filmed HD content is visually stunning, and shows detail simply not present in SD content. And even if a project's video source content is limited to SD, working in an HD pallet offers great advantages including the ability to:

1. Show SD video windows side-by-side.
2. Show SD video on one side and explanatory text or drawings on the other.
3. Intermingle high-res stills with video.

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<sup>7</sup> We hope Windows 7 will be similarly robust, but have yet to test it with live capture installation.

<sup>8</sup> We have yet to test all system configurations on 64 bit machines; however, some configurations have been tested on Windows XP 64 bit and have functioned perfectly without modification.

<sup>9</sup> We have not performed timing tests on AMD processors.

4. Present crisp text in any reasonable font size.

## Pricing

### ***Hardware and Software***

#### **Introduction**

As mentioned above, because of the enormous diversity in client needs and budgets, projects are assessed and quoted on a case-by-case basis. That said, we have provided some ranges below as reference points to help orient.

Note that shipping, plus taxes (if any), are additional.

#### **Pre-produced content**

##### **Example 1: TF supplies specialty elements only.**

1. TF provides Kinetic Doorway software, Spin Browser dial with 5 year warranty, and content and hardware advising during the project.
2. Others provide additional hardware needed (computer, monitor, cabinetry, etc.), video content itself, perform configuration work, backup, etc.
3. TF fee typically in the \$3500-\$7000 range per unit, depending on system features used, length of video, whether SD or HD content, number of units, etc.

##### **Example 2: TF supplies *all* core electronic elements, system configuration, and backup.**

1. TF provides same as in Example 1 above, plus:
  - a. Computer, screen, and premium filtered power strip.
  - b. Creates Attract sequence.
  - c. Does select custom coding and/or scripting if needed.
  - d. Advises extensively during the project.
  - e. Provides offsite content archiving for the duration of the warranty.

In other words, TF provides all but kiosk and video content itself.

2. TF fee typically in the \$6500-\$13,000 range per unit, depending on similar parameters to those listed in Example 1 above.

## Realtime streaming capture systems

Elements that will affect costs in such a system, in addition to those mentioned in “Pre-produced content” above, include:

### Camera(s)<sup>10</sup>

1. A single chip, low quality, NTSC (30fps 640x480) interlaced camera<sup>11</sup> can cost less than \$100.
2. Decent quality, industrial (designed for 24x7x365 operation) progressive scan standard frame rate HD cameras typically range from \$1000 - \$5000, depending on frame rate (lower is less expensive), image quality vs. light level (if you can have lots of light, sensor can be less expensive), and lens.
3. A good quality 200fps 640x480 color camera, with lens, can be acquired for around \$2500.
4. A good quality 500fps 1280x1024 color camera, with lens, can be acquired for around \$10,000 with capture card.
5. Higher speed cameras (to 10,000fps and beyond) that capture directly to onboard RAM can run upwards of \$50,000, depending on the resolution and frame rate required.

In summary, there is a big range in camera prices. Please contact us for more information and to discuss your application.

### Size of video capture data set

For pre-produced content systems, it is rare for video to run over 5 hours<sup>12</sup> / 300 gigs in size. However, for streaming capture systems, content can easily be over 10 times that. In such an event, costs will increase.

### Automated content backup

For looping capture lengths in the range of a day to a week or so (e.g., [A Day in the Life of a Starfish](#)), content backup is generally unneeded (because the system will completely reconstruct the perusable content in a short time even after a complete data loss). However, for systems that aggregate content over months or even years (e.g., seasonal weather capture installations), with file sizes potentially up to several terabytes, regular backup is critical.

Purchasing the hardware, configuring, and testing an automated backup system designed for several terabytes, dual redundant backups, typically runs in the \$4000 - \$8000 range.

### Example 1: One week of timelapse, TF supplies specialty elements and camera.

1. TF provides Kinetic Doorway software configured and licensed for 1 week of HD capture, with last 4 hours at 1fps, and prior week at 1/10fps, Spin Browser dial with 5 year warranty, timelapse 1fps 1280x720 color HD IP camera with lens, and content and hardware advising during the project.
2. Others provide additional hardware needed (computer, monitor, cabinetry, etc.), and preliminary computer software setup<sup>13</sup>.

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<sup>10</sup> Analog, IP/Ethernet, CameraLink, Firewire, etc.

<sup>11</sup> Note that the real-time KD+SB system deinterlaces on the fly.

<sup>12</sup> At 30fps.

3. TF fee in the \$8500 range per unit.

**Example 2: One year of timelapse, TF supplies specialty elements, camera, and computer.**

1. TF provides same as in Example 1 above, but licensed and configured for 1 year of capture, with last 24 hours at 1fps, and prior year at 1/10fps<sup>14</sup>. TF also supplies, configures, and tests computer, adding secondary capture drive(s).
2. Others provide additional hardware needed (monitor, cabinetry, UPS<sup>15</sup>, etc.).
3. TF fee in the \$18,000 range per unit.
4. (Optional) Automated backup system, dual redundant backups: Add figure in the \$4000 - \$8000 range, depending on details.

**Example 3: High speed capture, 640x480 color 200fps, TF supplies specialty elements and camera.**

1. TF provides Kinetic Doorway software configured and licensed for high speed capture, Spin Browser dial with 5 year warranty, 200fps 640x480 color GigE camera with lens, button-activated system where visitors can perform their own high speed physics experiments and then instantly review, “Workshop” mode where staff can perform longer and more flexible capture, and content and hardware advising during the project.
2. Also includes three seamlessly-integrated high speed pre-produced content clips to engage visitors and give them ideas for their own experiments.
3. Others provide additional hardware needed (computer, monitor, cabinetry, etc.), preliminary computer software setup, button, and high intensity DC or high frequency lighting.
4. TF fee in the \$11,000 range per unit.

**Example 4: High speed camera, 640x480 color 200fps, TF supplies complete Turn-Key system including lighting and casework.**

1. TF provides same functionality as in Example 3 above, but as complete Turn-Key exhibit, including computer, screen, DC / high-frequency lighting, cabinetry, etc.
2. TF fee in the \$28,000 range per unit.

**Example 5: High speed camera, HD 1280x1024 color 500fps<sup>16</sup>.**

1. Same as in Example 3 above, but with HD, and higher fps, camera, TF fee in the \$20,000 range per unit.
2. Same as in Example 4 above, but with HD, and higher fps, camera, TF fee in the \$40,000 range per unit.

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<sup>13</sup> Windows Updates, QuickTime, etc.

<sup>14</sup> Order of magnitude 1 Terabyte of data.

<sup>15</sup> Including UPS controlled shutdown software installation and testing, if such chosen for use.

<sup>16</sup> 1000fps at 1280x512.

## Special “Competitive Upgrade” price reductions

Periodically we are contacted by clients wanting to upgrade/convert select existing media-based exhibits from whatever they are using currently to a KD+SB system, for all the reasons discussed in our [Features and Advantages document](#).

Because we realize that once exhibits have been completed, budgets are significantly less than during initial design and construction phases, and because we are confident once people experience our system they will want to use it in other contexts, we offer special "competitive upgrade" pricing.

Specifically, in situations where the client is providing the computer and backup services, we offer KD+SB system at a 20-40% reduction off normal pricing (depending on system details).

## Volume discounts

*Significant* volume discounts are given on multiple purchases. Please contact us with the details of your application for a quote.

## Refurbished systems

Periodically refurbished systems become available at reduced cost. Please contact us to inquire about availability.

## Rental and lease

All our systems<sup>17</sup> are available for rental or lease, as well as purchase.

We also offer live capture environments, with or without the Spin Browser user interface hardware, for those interested in performing timelapse capture - either for eventual use within a KD+SB system, or for other uses (broadcast, web, etc.). Our system combines convenience with flexibility & power. Specifically, the KD+SB system is in our experience unique in terms of its utility for:

1. Accumulating video where image quality and capture reliability is at a premium.
2. The content can be immediately reviewed in parallel with ongoing capture.
3. [High speed data-filtering](#)<sup>18</sup> may be *reversibly* performed in seconds without the need for time consuming video rendering.

## Computer

Required computer is project specific, with prices ranging from as little as \$500 for a consumer grade, simple system with non-ECC memory, to over \$2500 for a rack mount high speed workstation grade machine with ECC memory, triple screen graphics card, etc.

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<sup>17</sup> With the exception of high speed cameras which are typically too costly for us to inventory.

<sup>18</sup> E.g., seeing just the sunsets in a year's worth of weather capture.

## ***Video content***

There is really no "standard" price for the video production, as quality, and related cost, can easily range by well over a factor of 10 depending on what is wanted.

Should you wish TF to supply video content, either via custom production or from stock, we would be happy to oblige. We are experts in creating content for our system<sup>19</sup>, and have over the years accumulated an extensive stock library specifically acquired for KD+SB use, and whose license fees are just a fraction of the industry standard. If the content deliverable is well defined (or flexible), and creatable from our existing library, we can offer a flat fee. Otherwise, we typically charge on an hourly basis, plus licensing fees and expenses.

In the special case where the request is simply for “a good amount<sup>20</sup> of cool, diverse, educational material”, with no specific topic or custom content required, a purchase cost in the range of \$3000-\$9000 (depending on length and specific clips) for the content (separate from hardware and software cost) is a reasonable estimate.

As we learn further details of your project, we can provide more accurate pricing.

## **Production timeline**

Assuming video production and casework is handled by the client, TF normally requests 6 weeks from the latest date of receipt of: A signed agreement, down payment, all video content in final edited form - until shipment of the completed system. In emergencies, particularly with a bit of warning ahead of time, we can often turn things around significantly faster than this.

Should video production, casework, custom modifications, specialty high speed cameras, or large volumes be required, please contact us to discuss extended timelines.

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<sup>19</sup> That said, we are very sensitive to the business needs of video producers. In particular, we enjoy long term, enjoyable relationships with several production colleagues, where we supply our KD+SB software and hardware, and they produce the content. Thus, should the reader be a video producer, note that we are typically delighted to play the role of collaborator and supporter of your work, rather than being a competitor.

<sup>20</sup> Which we typically recommend to be about 30 minutes.

# Payment schedule

## Small projects

Typically TF is paid 75% up front to begin work and purchase hardware, with the final 25% due within 30 days of receipt of unit(s) in good working order.

## Large projects

Typically TF is paid 50% up front to begin work and purchase hardware, 35% when completed system is ready to ship, and final 15% due within 60 days of receipt of unit(s) in good working order or 30 days of exhibit install, whichever is sooner.

## International projects

For international projects, we generally require 100% payment prior to shipping, or that the money is put in a 3<sup>rd</sup> party escrow account.

# Custom designs in software and/or hardware

TF frequently tailors the standard KD+SB environment to address specific client needs. These modifications range from linear-slider user interfaces, to multi-dimensional content-addressing button arrays, to special ways of dealing with audio, to unique content metric extraction to allow visitor-controlled data filtering.

Cost for such custom designs range from as little as a few hundred dollars for say four buttons that allow the visitor to select a particular content topic, to (typically) several thousand dollars for more complex modifications. For customizations that provide the KD+SB system with significant new functionality of potential use to future clients, TF will often subsidize the development cost.

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Additional questions or clarification requests related to this document may be addressed to David Durlach at the phone and address in our letterhead, or sent to <david@technofrolics.com>.

We look forward to helping you delight and educate your audiences!