three

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editorial

the third issue of machinimag took a while to be released.
and again, it's not just information, it's ment to be a statement.
machinima not only is a very young medium, it is also a medium of a fast, ever changing world.
machinima can be art, yes.
in order to lift up machinima to the next level, we need to express ourselves.
get a feeling across.
there's not that much machinima movies that adress anything personal.
do we fear making something serious?
where's our self esteem to do things that move people.
or at least try.
we have a ton of dramatic moments in our live, be it love, hate
or the overwhelming speed of technology and the rapid development of the human race itself.
machinima is a fast medium. machinima is a medium of our time.
let's make machinima more human.

interview

with ken thain

Ken Thain aka 3Dfilmmaker.
3Dfilmmaker.com webmaster.
famous Rebel vs. Thug music clip director.
New movie EVERSEASON to be released soon.

Hi Ken, thanks for your time. You seem busy right now. You want to tell us what is going on?

On the machinima side of things I've been going full tilt to get my current production, EVERSEASON, finished for release. I have been working steady on it for over a year now and I'm looking forward to releasing the end result.

The good thing is it's been a real cool project to do and using the unrealTournament 03/04 engine has been very fulfilling.

Some projects can grow stale over such long development times but this one has been a work of passion with constant development milestones. I've also been impressed with the depth and capabilities of the Unreal Engine. It has provided all the power and features I've needed and then some. It genuinely is a kick ass virtual reality engine with loads of extras.

Other than the film, I continue to try and share the news and entertainment I come across online with my 3dfilmmaker.com site. With my interests mostly focused within the machinima realm, it's been cool to see how much machinima related stuff I can throw up there. A few years ago you'd get a piece or two every so often.

Now I'm pretty much seeing machinima related news and films on at least a weekly basis.

What part of your production took you the longest to develop?

Definitely the character animation. I've gone custom animations all the way and it's been no walk in the park. Without the custom animation my production time probably would have been cut by 6 months.

I expect some machinima critical controversy when I release because every motion is pre-planned even before getting into the engine but the most important factor for my films is the final visual look and flow. Whatever I can do to get exactly the shots I want, I will.

Other than that, the next longest phase was pre-production. That in itself was over 3 months (for a story of 4.5 minutes). The cool thing here is I went straight from paper into the game engine. Once I had my rough storyboard fleshed out on paper (and were talking stick men here) I created the next storyboard draft in-engine. So basically the storyboard is a real-time playback with posed characters. Once done, that real-time storyboard version was the base I built on for the whole rest of the production. That meant all editing was done even before production began, no re-tooling from pre-production to production, no post anything. The whole production is built right out of that initial in-game storyboard. To me, this was a real evolution in the film creation process.

Alright, let's go back in time and tell us something about what you did before machinima existed...

Hmmm, lets go back....way back...before machinima....before...earlier...earlier...shiny lights...can't move...they're in the house...no...no...don't take me. Woa, too far... Lets see, I've been deep into machinima for over 4 years after I came across the Machinima.com site right after it started up. I was totally hooked on the concept and it's potential.

Before that I spent my working time in software product management (which lends itself well to managing machinima productions) and my spare time experimenting with different mediums and digital techniques for storytelling.

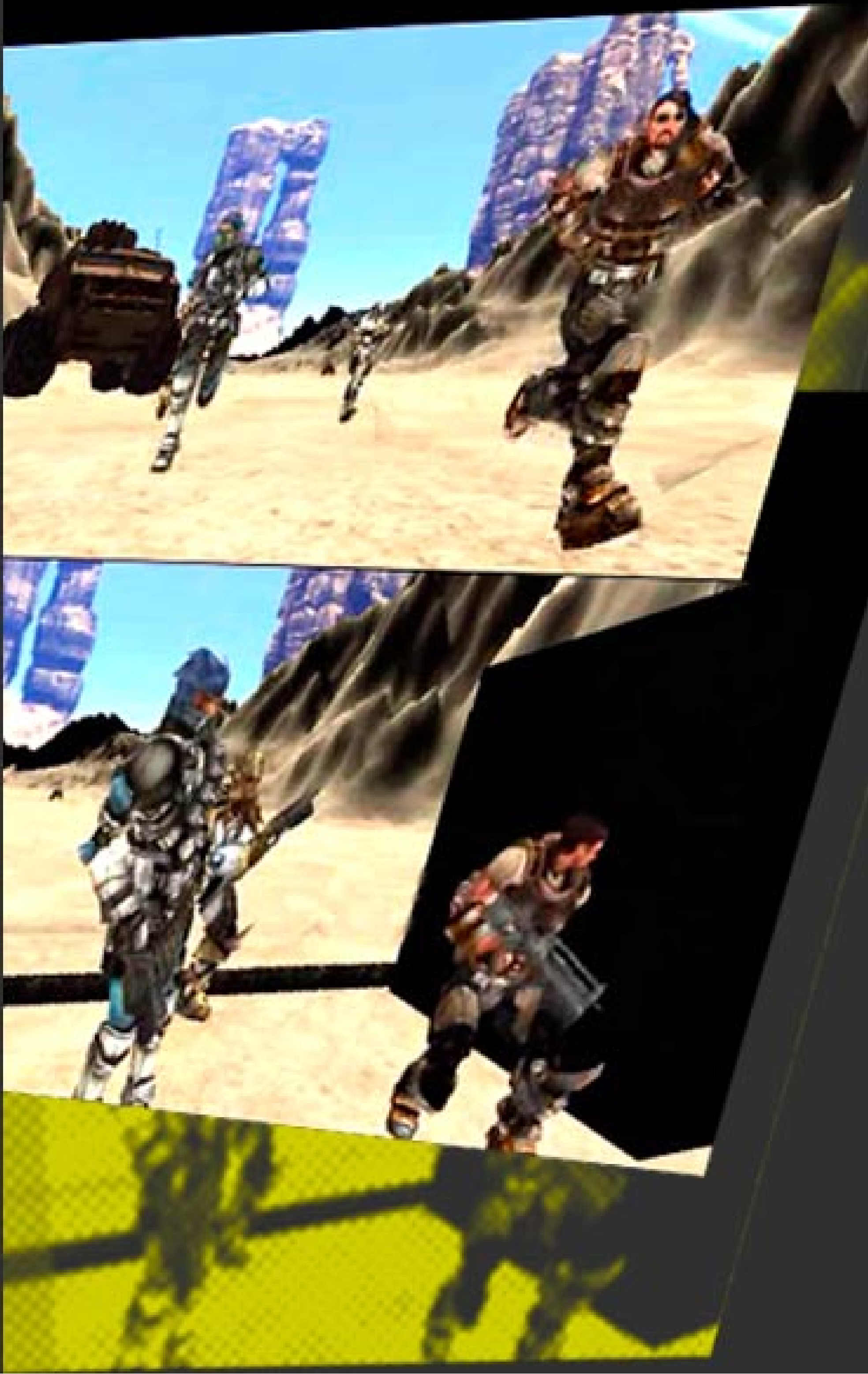
I've always had a passion for filmmaking and skills for anything technical so I spent a lot of time wavering back and forth between the two extremes. 3D animation was my main take until finding machinima.

It totally fed the perfect dish of accessible filmmaking mixed with cutting edge technology.

And right afterwards, your definition of the word "machinima", please.

Now that's a loaded question. I've witnessed more than my share of holy wars on defining the indefinable. The easy to swallow definition I like best is the one I used as the title of my** soon to be released book, 3D Game-Based Filmmaking: The Art of Machinima (to be available in fine bookstores everywhere).

People can understand the simpler concept of using games to make movies, and that's what 98% of the recognized machinima films are right now. But my personal definition would be that machinima is both technique and medium to graphically immersive filmmaking.



**The book is actually written by Paul Marino, an award-winning Machinima and animation film director and designer. I just wish I could be so smart.

In your opinion, what's the most tricky thing to achieve in machinima?

Audience suspension of disbelief. This is the willingness of your film viewers to suspend their critical nature in order to "go along for the ride." This is very hard to obtain right now in machinima because of the many production challenges, i.e. 'it looks too much like a game' or, 'the characters mouths don't move' or, 'why are they always holding a gun and running'.

It doesn't take very much to snap a viewer out of the story and machinima films have a lot more challenges to this than your regular film.

It takes great care to go over your production with a fine-toothed comb and address these snags.

It is your judgment call as to where you want to draw the line, spend the time to fix, make it creatively hidden or just live with it as a -hopefully temporary - limitation of the medium.

It's all about the graphics... - would you agree with that?

No. It's all about the story and having a medium that is accessible by the larger (modern) whole that can tell their stories. The graphics and technique and technology and content is all gravy against the bottom line of being able to buy a game and hacking it to tell a story you can share.

And lets not kid anybody here. You're not playing with Hollywood by hacking these games. The reality is you can start with almost zero budget, work very hard with extreme challenges and may end up with a film that is recognized on par with a film created within a traditional 3d application.

But it only cost you 50 bucks.

The day after I came across machinima I went to a video game store to pickup my game engine of choice. I found myself standing in front of a wall of games without seeing 'games', I saw a wall of potential virtual worlds I could use to tell an endless amount of stories ...fantasy, war, sci-fi, horror, sports...

It was all there, pre-packaged with sets, characters, props and special effects. Now obviously the reality of this is the real machinima capable games at that time was 2 or 3, four years later its 5 or 6, and potentially soon enough every game on that wall will be open to anyone's creative endeavors.

So if its so accessible and low end, why am I even bothering with it? Because of its potential.

There is not one faucet of this medium that is not boiling over with possibilities. The real-time playback aspect, the packaged content aspect, the neo-production possibilities, the high speed of technology advancement, etc, etc. - all that gravy.

It's my personal challenge to push the bar and show these possibilities.

The one skill that helped you the most doing machinima was -

Persistence... is that a skill? No, maybe determination...no that's not a skill either. How about passion for film making...nope, no skill there.

So I guess I'd have to say typing. But then again, even that I only got 54% on my final grade in high school.

So really it would have to be my technical aptitude. Machinima is still in its early adoption phase and with the earlier game engines you literally did have to hack them to get the results you may be luck enough to get. I'm not talking coding here but even just getting a custom content into the engine was like pulling teeth.

Now things are streamlining very nicely and those older challenges are staying in the past, leaving room for new creative talents to get involved.

By what time do you think machinima will be taken seriously in professional production?

Hmmm, good question. Define seriously. Like I mean it's definitely being watched by the different industries, and there are professionals that are working with it and experimenting with it.

It just depends on your industry and what you are looking to create. It may never be taken serious by the high-end market but it may become commonplace in the Gaming industry (watch the movie, play the game).

One thing you'd like to see more in machinima movies is...?

More pre-production, which is actually something you don't directly see but it does reflect in the final piece. A story that has carefully planned out shots and a thought out story before capturing a frame shines a thousand times

brighter than a story that is an afterthought of edited footage or a film built shot by shot without pre-planning.

It actually takes real discipline to really plan everything out to a tee, and I think most people get impatient to get into production and figure they will just fill in the blanks as they go along. Your film will pay in the end for this lack of planning. Things in your film will make sense to you (because you created it), but others will not follow it. My advice is usually to at least create a rough, penciled comic book type storyboard of your story. Use stick men or whatever. And make sure your storyline and shots work on paper. If so, then get the shots done, but if it doesn't work on paper, its not going to work on the screen.

And the one thing you're tired of seeing?

1. 1942 War movies. I've seen some real talents using this genre and there are some great films out there but for me the whole 'Guns of Navarone' thing has been done to death. Even though I expect its more from the popularity of these games, it would be great if someone shook it up a little to spark some new creativity.

2. Red vs Blue type dialog based films. RvB has some real scripting talents that brought this type of machinima to unexpected heights of attention, but for new films I think its time has passed. If your doing this type of film, try to throw in a little action to keep people involved. This is something I think the Fire Team Charlie guys have done well.

Your vision of machinima movies done in the next two years?

I think the next two years will be exciting in machinima. It is just reaching the twilight of its mainstream acceptance. I think we'll see some solid professional projects (read: budgeted) and some exceptional independent efforts, including full-length movie attempts.
The newer engines will come into maturity and we should see some real jaw dropping short productions that will really make people look twice. I also think we will see more advancement with other machinima production methods, such as live virtual production and MMORPG studios. I fully intend to be in there somewhere.

Thanks a lot Ken for taking your time and answering the questions. Wish you all the best with your production and future

all screenshots are from ken's new movie EVERSEASON, are work in progress shots and are not fully reflective of the final product.

layering in machinima

What is layering? A term that most of us might connect to photoshop can turn a boring looking part of a movie into a stunning scene filled with tension and visual candy.

Layering is no feature of a software or available through plugins. It is a way you can compose your image by placing your Content in a 3 dimensional space. Placing things closer to the camera and others far away gives your shot depth and transports the feeling of the room where the action takles place.

One of the grand masters of layering in film today is Ridley Scott. Dense atmosphere as in Bladerunner or Aliens is achieved through careful placement of objects and Actors in the space of the shot, making it look deeper and more crowded than it actually is.

To achieve good layering, there's a couple of things that need to be taken care of.

Layers are by no means flat or 2 dimensional. It's more like a group of objects that have more or less the same distance to the camera.
To start simple, you can divide shots in a foreground, a background and a central layer.

Objects in the foreground are placed closer to the camera than objects in the central layer. Objects in the background are far away from the camera.
Now what seems quite obvious, as we are talking about three dimensional pictures here, is not as easy as it might sound. The need to distinguish between the three layers is what makes layering difficult. In order to get the feeling of depth across the screen, you need to make the division obvious. If all of your objects have more or less the same distance to your camera, the shot looks flat. If you have no foreground, your action might look lost. If you lack a background you loose the feeling of the room and your picture gets flat again.

The heart of the action should always occur in the central layer of course, making it easy to follow and according to the focus of the viewer.

But all too often we forget about the other two layers that really make the difference. Is the information you transport in your piece so complex that people have to solely look at one place to get the idea? Why not spread additional hints and distractions in the shot?
Having something going on in the background breathes some live in the shot and generates additional interest. Maybe you can hint to the next scene? Maybe you can give some extra information that makes it easier to guess what happens next?

The background is definetly the place to keep the audiences interest high. Just think about horror movies. The most scary things come from behind...

The foreground is a perfect place to hide the action going on by carefully placing objects that cover parts of the action. Presenting your action less obvious and therefore increasing our neugier. Neugier is what's keeping your audience guessing and linked to your plot. Hide things to make them more interesting.

Only reveal what's necessary and let your viewers' imagination make up what's really happening.

Also, layers can add interest in less tensed parts of your movie. For example in a dialogue scene, some movement in the background will make a nice distraction for your viewers' eyes and therefore makes it easier for you to get your information across.

Always have something happening visually. If your main characters are talking, make the other layers stand in for the visual and action part.

Once you have your layers filled with action and interest, it's time to shift. Shifting between the layers in machinima is not as easy as it might look first. In traditional Cg, you have the possibility of a lens focus like in real film.
At least for now, this feature is yet to be implemented into most common machinima production packages. Some workarounds (as in machinimag01_ depth of field tutorial for ut2003) require additional compositing software and are rather hard to achieve.

But there's always ways of shifting interest between the different layers.

Having your scene develop from a central layer into the background and then back forth is a way to keep the viewers interest and avoid boring moments.

Make your characters enter a scene in the foreground and then proceed to the central layer to get their things done. Let them leave in the background.

Change the distances between the action and the layer. Regard your main action as a layer itself and make it move between the visual layers in your shot. Try to make all three layers visible and obvious in most of your shots. Try to hide the action with interesting foreground, make your audience guess what's happaning and use their imagination.

Give hints in the background of your shot. Why not use the background of one shot as foreground in the next one?

Reuse your layers through careful editing. That way your layers can generate a feeling for the place your action takes place. Make use of them and your shot will look great.

I, agent

I'm on the front line of machinima production. My abilities make your dreams come true...or not. I am your slave, yet, most of the time it takes a while until I understand. Maybe somewhere in the not too distant future, our languages will merge...

Digital Actors, or Agents as they are often called are one of the most vital parts of machinima production. Their looks, obviously, how they move. Visually an agent in machinima is no more than in a 3D application. It's the guts that make him different, leading to the fast production times in our medium.
Sadly enough, game engines are too often used as a realtime renderer to show animations built in 3rd party 3D applications. The introduction sequences for the newer unreal tournament games for example are nothing more than motioncapture files that are stitched together in the engine, triggered one after another by a very very simple script.

If you work that way, go ahead, but you disrespect the very essence of one of your most valueable resources.

Digital agents are capable of so much more than just playing back some predefined animation.

Your agent can walk, did you know? With a little love and care, he even walks in exactly the style you want him to.

While walking, he could carry a piece of paper, or a bag. And then he could stop, just by telling him to, turn around and smile. Almost like real life actors.

Well, to implement these things into a gaming engine seems useless, looking at the main concept of games that are being developed.

Most game's agents don't even know a life without a gun. They cannot smile, and I never seen any of them carrying a bag.

How cruel. Imagine your life consists solely of carrying guns, shotting people and jumping awfully often up and down.

Now I wouldn't be happy with that.

Yet, if you go deeper, most agents have the capability to make more out of their lives. Even carrying a gun makes the upper body do something else than the lower body. They react to simple commands, they stop in front of walls (although I've seen too many that still try to run through...) and they can fall down if they walk into a hole. Some even hurt themselves and break their bones.

Developing an animation on its own might seem more reasonable by now, but if you think a little further, your agent grows steadily with every possible action you teach him. Invest a little more time to make him learn the animation. He'll use it on a simple command and will soon combine it with other animations. Far more possibilities, ease of use and production speed.

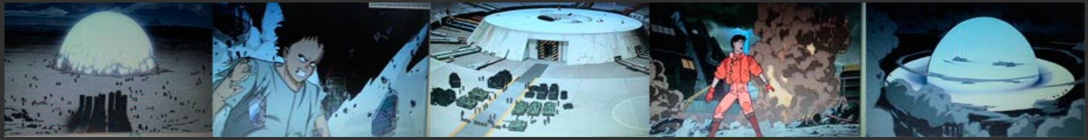
And he'll be happier.

Believe me, you'll love your agents once they start turning around, smiling, carrying a bag and waving the other hand. And all of it just because you said goodbye...

It seems unfair to have our agents on a level as low as it is now. Thanks to agents, we now have the possibility to make our movie dreams come true with machinima. I think it's time we give something back...

the different animation

Animations still pose the most vital problem in most machinima pieces. As machinima is almost impossible to do without additional animations produced in 3D Packages, they require a lot of skill and the software involved often costs a fortune. To make things worse, animating is a whole artform itself and often movies stand and fall with the way their characters are animated.



Basically, animations define what your character can and cannot do. Whenever you want your hero to perform a simple action, it needs an animation. As game engines have a basic set of animations for their characters, the actions that can be performed are more than just a little limited. Shoooting, running and maybe some idle animations aren't enough to make up a good plotline.

But how can you generate all the necessary animations for you movie to work out?

I f we take a look at japanese animated movies, they have an even bigger problem to solve, as they don't have access to tools like keyframing, interpolation or motionblending to make their characters come to life.

And most of the time, they can't even reuse what they already produced. Seems logical that it is necessary to developed a form to keep the overall amount of work quite low and still generate characteristic lively animations.

Let's have a closer look at a movie like, for example, Akira. For those of you who are not already familiar with the plot of the movie, you find the abbreviated content in a few pictures on your left.

Now let's take a closer look at some of the techniques used that might get useful for animating in machinima. One scene that's worth taking a closer look at is the motorbike scene at the very beginning of the movie.

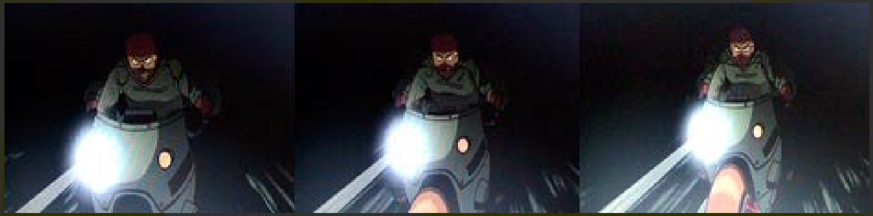
Now motorbikes seem to be quite easy to realize in machinima, and even a chase does not seem to be that big of a problem.

The interesting thing is, how they implement the different characteristics of the cast in simple, easy to generate animated parts.

Let's take one shot and divide it up into different parts to look at.

The moving elements in the scene are clearly defined. The background, the jacket of one of the riders and his face. The background itself is no problem for machinima, as it consists of the set we already built and does not need to be animated at all. For the animators of akira, it seemed useful to loop certain parts to lower the necessity of drawing too many individual frames.

The kacket itself get's interesting, especially for machinima. It is made up of a loop that



consists of only a few frames. If we look closer, there's just a couple of poses the jacket really is in.

Now what does that mean? Repetition. One thing we shouldn't be anxious of in using in machinima as well. Keep that scene animated, even though you make excessive use of looping. Rather keep your loops short and make some of them to vary a bit than trying to make one big animation that lasts over the whole shot. For moving actions that aren't vital to the storyline, repetition can help safe a tremendous amount of work.

But what about the things we really look at? What about the actos face?

If you divide the shot down to the individual picture, you see that only few images really differ from each other. Istead of having a constant animation going on, we are rather developing from one pose to another, giving each pose enough time to last and make the impression it needs to make. So instead of a facial animation overkill, we could just generate facial states to skip through. Looking at the time it takes the changes to take place, we immediately realize that the actual animation is replaced by something that's rather a cut, maybe a fading between the two facial states.

The use of facial states can safe an enormous amount of time as you can switch through various facial states without the need to generate the in between values and your characters can still look expressive and get the message across.

Another thing we learn from our scene is the necessity for separation. Dividing our character in different parts with different animations and animation techniques. The head works with facial states, that have enough time for each frame to get the expression along. The jacket itself consists of only a few keyframes and loops, still giving the impression of great speed together with the moving background.

In this image, a lot of items remain without animation and so without the need to be redrawn each frame. A lot of frames get reused to make life easier for the animators.

It is the mix of rough, fast looping keyframed animation and the reduction to almost single framed states that keeps the picture interesting and appealing. If you would use just one of those techniques, your shot would almost always look boring.

Another really necessary thing we learned is division. Think about your characters, actors and meshes. Divide them into things that animate in states and things that don't before you animate them. You'll have a lot more reusable data, eventually having a fully functional animation database for your character that only needs to be updated in a few rare situations. Additionally, you can personalize different parts of your character and reuse others to make for a variety of possible combinations.

Thinking of character animations in poses makes for an easier life animating, as you don't need to smooth out every single move. A few keyframes can make the difference. And you have the opportunity to choose how long your pose will last according to the specific scene without need to go back to your animation package. Again, a lot more reusability.

Finally, use the camera as an actor itself. Thinking about your camera angles can make all the difference when reusing the same animations. Movement, zooms and framing can tell a story itself and sometimes replaces complicated animations.

As you see, often enough, barriers can change to useful ways of structuring your movie. What might seem as a complicated problem first, can be the characteristic value that makes your production stand out from the others'.

ScriptRO

scriptComposer

for unrealTournament2k4 v0.9beta

ScriptComposer is an action-based toolset for the Unreal Tournament level editor UnrealEd, designed to faciliate scripting of realtime movies.

Action based means that the scripting is not based on a timeline as in traditional CGI Animation, but as a series of actions that are linked to each other. Scriptcomposer can be combined with traditional Unreal Tournament AIScripts and Matinee.

Scriptcomposer provides camera tools itself. When used in addition to matinee you can achieve extraordinary results while being faster in production and having more ease of use.

But let's see how scriptcomposer works...

The Action based system.

As mentioned above, Scriptcomposer does not provide a timeline but instead is based on actions that are linked to each other. These actions are called "Orders" and have a visual representation in UnrealEd.

This tutorial provides you with a basic room that is set up very simple. We have a pawn, some pathnodes and a couple of staticmeshes for decoration. Also, the Gametype in the LevelProperties is set to UnrealGame.CinematicGame. There's no scripting in there yet, so let's get it started.

The easiest way to place orders is via the custom toolbar icons. If you followed the installation istructions correctly, you should have a couple of icons to place different Order Types. Once you click on the Icon, the Order is placeable via right clicking just like any other actor is. Now we should place some orders to make our pawn do some fancy things.

The place to start is almost always the Root Order.

The Root Order can be assigned to any pawn by a simple click. In the root order's properties you find things like the pawns walking speed or you can set him to be invulnerable.

One key element of the ScriptComposer is the OurNextScript property.

OurNextScript is the Link to the next Order that this Pawn should process. You simply assign another Order to that property and the pawn will do what you tell him. So let's make him move.

Place a MoveTo order right beneath the Root order. Now click on the

OurNextScript button in the Root order's properties and click Find. Next, select the MoveTo order.

We have now linked the MoveTo order to the Root order. When the pawn finishes processing the Root order it will switch to the MoveTo order and process it.

Now let's tell our Pawn where to move. In the DestinationActor property, click on Find and then on one of the pathnodes. You may want to set the IsWalking property to true as well to make him move more slowly. If you want to test your script, go ahead and hit your play button. You don't need to rebuild your map. Just hit the joystick icon and if everything worked out, the pawn should move to the position you gave him. It's that easy.

For the next step, we want him to turn around and play an animation.

We need the RotateTo order and the PlayAnim order. First, we place the RotateTo order and link it to the MoveTo order. Click Find in the OurNextScript properties of the MoveTo order and then on the RotateTo order to link the two orders. Then we assign the new ViewTarget through the Find button as well. Next, we fill in a particular amount of time for the pawn to make him wait for the rotation to finish before proceeding to the next order. For a full 360° turn, WaitTime would be 2 seconds. For 180°, one second should work out.

When everything is set up, we place the PlayAnim order and link it to the RotateTo order.

For AnimName you might want to fill in "AssSmack". We leave the other options as is for now and might get back to them later.

When finished, let's take a quick look at what our sequence looks like right now. Your pawn should walk to the point you specified, turn around and wait long enough for the turning to finish, then play the "AssSmack" animation.

If your pawn does not turn far enough or waits too long after turning you might need to change the WaitTime in the RotateTo order.

Looping.

There are some neat things the scriptcomposer can do for you. We should have a nice little script right now but it ends too soon. So why not place another MoveTo order and make the pawn run to another location? Go ahead, link it to the PlayAnim order and set it up as you wish. But this time, set the MoveTo order's OurNextScript to the very first MoveTo order you placed.

When looking at the result, you'll notice that we just created a looping scripting for our pawn.

Camera Setup.

Now with our pawn already doing quite a lot of things, it's time to place some cameras. You can place cameras just like orders after clicking on the "place Camera" icon.
And of course, you can integrate the camera cuts into your order structure via Linking the „CutTo" order.
But you can start an all new list of orders that are not bound to a pawn with the ScriptRoot order.
Place a ScriptRoot order and link a CutTo order to it. In the CutTo order, assign the camera you want to activate. Then Placa a WaitForTimer order and link it up after the CutTo order.
Place another CutTo order, link it up respectively and assign another camera.

When testing your level, you should now see your viewpoint change to that of the first camera and after the time specified in the WaitForTimer order, switch to the view from the second camera.

Tips and Tricks.

This tutorial only scratched on the surface of what's possible with the ScriptComposer package, but it should give you a feel of the workflow and useability of the tools.
You find an overview and explanation of all the orders in the manual provided with the installation.
To give you some room to experiment, here's some Tips and Tricks on what's possible...

* Try and assign a pawn as CameraActor and see what happens.
* Cameras are moveable and can be attached to all sorts of things. They can be animated via Matinee as well...
* The Iterator order makes it possible to loop a script for a number of times.
* With the ScriptRoot and the WaitForEvent order you can create groups of orders. If you loop them you can reuse them at a later time.
* The CustomSet order works just like traditional Unreal AI scripting. Except the fact that you find tons of new Actions.
* You can link Unreal AI Scripts just like orders.

And last but not least, the Scriptcomposer is still in development and needs your feedback. If you encounter problems, find bugs or just want to tell the author how you like or hate the toolset, feel free to contact me at fiezi@zeitbrand.de.