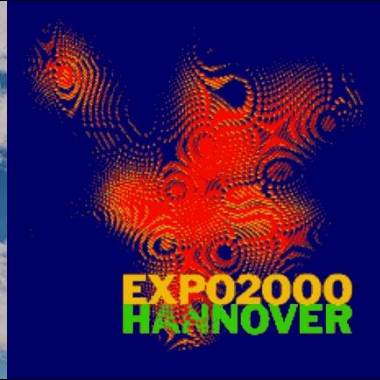


F L A S H

A R T





EXPO 2000 SFX CASE STUDY

Client	EXPO 2000 Hannover
Project	Flambée Human Facets – daily EXPO Show
Executing Agency	Artmobil GmbH, Frankfurt
Duration	5 month
Shows	154
Budget	650.000,-- €



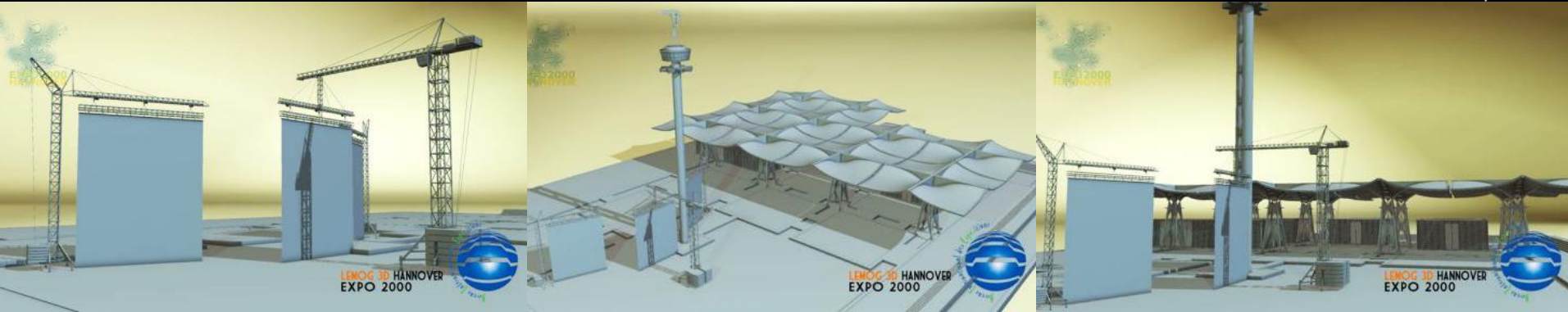
REQUIREMENTS

Projection water screen	3 units with projection surface of 20 x 20 m
Gas system	600m ² water surface burning 12m liquid gas flame system ladder to the moon 20m burning element heart 12m burning element.
Fog	water fog system for the whole lake show fog system 360° around the lake
Water Jets	digital controlled water jets 30m central geyser 75 m
Pyrotechnics	line rocket from tower to lake waterfall cascade from tower comets, mines and other classical effects
Stunt	burning man flying from the tower into the lake
Show Control	fully timecode synchronized show control for all effects



CHALLENGES

- Permission for gas system with a time of only 4 months to develop and a set up, never been realized before in Germany, the cooperation with health and safety, fire brigades and TÜV has been essential.
- Reliability weather conditions in Germany throughout 5 months are not foreseeable and planning needs to implement heavy and long lasting rains, storms, as well as low and high temperatures.
- Sustainability especially the sound emission as well as the used liquids and provided power needed to fulfill various conditions by the government as well as by the client
- Logistic how to store pyrotechnics and more than 6 tons of liquid gas in the center of the EXPO site and create reliable handling and refilling had to be solved efficiently



SET UP

The daily EXPO SHOW Flambé took place in an artificial lake, build directly besides an iconic wooden roof construction and the EXPO tower.

The set up required 3 x 20 x 20m Water Curtain, that were set up on construction cranes.

The wooden roof and the site in the middle of the EXPO venue created several challenges in terms of safety and logisitc.



FLAMBÉ SET UP EXPO 2000



WATER CURTAIN

To create a dense and especially 20m falling water curtain a system with more than 1000 nozzle per meter in 5 lines has been created. Due to the unique nozzle design and the high water volume provided by the pumps the surface did not break even with strong winds and allowed a high resolution projection.

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PROJECTION ON 3 WATERCURTAINS

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SANDMAN PROJECTION AND PIXIE DUST





GAS SYSTEM LPG

To safely provide gas supply, the tank has been build under the water surface in the lake. Every ignition of the different fire effects was made redundant. For the huge burning surface a third level of ignition by a pyro-effect was implemented into the show design.



Information

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BURNING WATER SURFACE



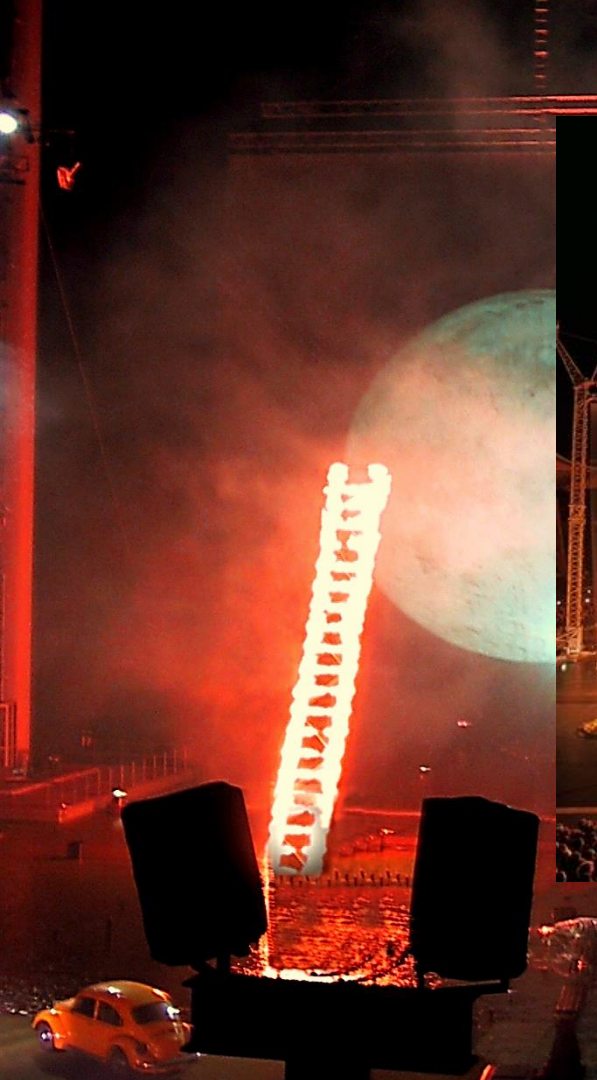
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BURNING WATER SURFACE







WATER EFFECTS

Digital controlled water fountains and a special heavy water fog system as well as a huge central geyser with around 75m height was set up with a total pump power of over 120 KW





PYROTECHNICS

Pyrotechnic effects with sound suppressor, a burning man flying from the tower, special produced waterfall effects to secure the wooden roof construction in direct neighborhood worked out reliable in 157 shows.

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FOG

A high pressure water fog system created a 100% environmental friendly fog on the water surface.

This system was completed by 12 9kw theatrical fog systems and fans to create enough atmosphere for various sceneries.

The system was planned in a way to work with every wind direction and programmed in various pre sets for different weather conditions.



FlashArt
Herr Markus Katterle
Detmolder Straße 629b

33699 Bielefeld

CLIENT FEED BACK

EXPO 2000 „Flambée – Human Facets“

Sehr geehrter Herr Katterle,

Sie haben im Jahr 1999 mit Ihrer überzeugenden und professionellen Präsentation Ihres Leistungsspektrums den Wettbewerb gewonnen zur Gestaltung und Durchführung sämtlicher Wassereffekte, pyrotechnischen Effekte, Gas- und Nebeleffekte und aller anderen Special Effects für die tägliche abendliche finale Großveranstaltung auf dem und um den EXPO-See anlässlich der ersten Weltausstellung in Deutschland im Jahr 2000.

Für Sie mag es selbstverständlich sein, aber Sie haben mit Ihren innovativen Ideen und deren perfekten Umsetzung wesentlich zu dem großen Erfolg dieser Veranstaltung beigetragen.

Die 154 Veranstaltungen, die ohne einen einzigen Zwischenfall oder technischen Ausfall über den gesamten Zeitraum von 5 Monaten von Ihnen durchgeführt wurden, gelten aus heutiger Sicht mit ihren insgesamt über 4 Millionen Zuschauern als der größte Publikumsmagnet der EXPO 2000 Hannover.

Wir danken Ihnen für Ihre Arbeit und bitten Sie, diesen Dank auch an alle Ihre Mitarbeiter und Helfer, die zuverlässig und professionell über diesen langen Zeitraum uns zur Seite standen weiterzugeben.

Mit freundlichen Grüßen

Klaus Schaeffer

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Klaus Schaeffer, Klaus Schaeffer

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Dear Mr. Katterle

In 1999 you won the competition with your convincing and professional presentation of your range of services for the design and implementation of all water effects, pyrotechnic effects, gas and fog effects and all other special effects for the daily final big event on the EXPO lake on the occasion of the first world exhibition in Germany in 2000.

You may take it for granted, but with your innovative ideas and their perfect implementation you have made a significant contribution to the great success of this event

The 154 events that were carried out by you over the entire period of 5 months without a single incident or technical failure are, from today's perspective, with their total of over 4 million viewers, the biggest crowd puller at EXPO 2000 Hanover.

We thank you for your work and ask you to pass this thank you on to all of your employees and helpers who have stood by us reliably and professionally over this long period of time.

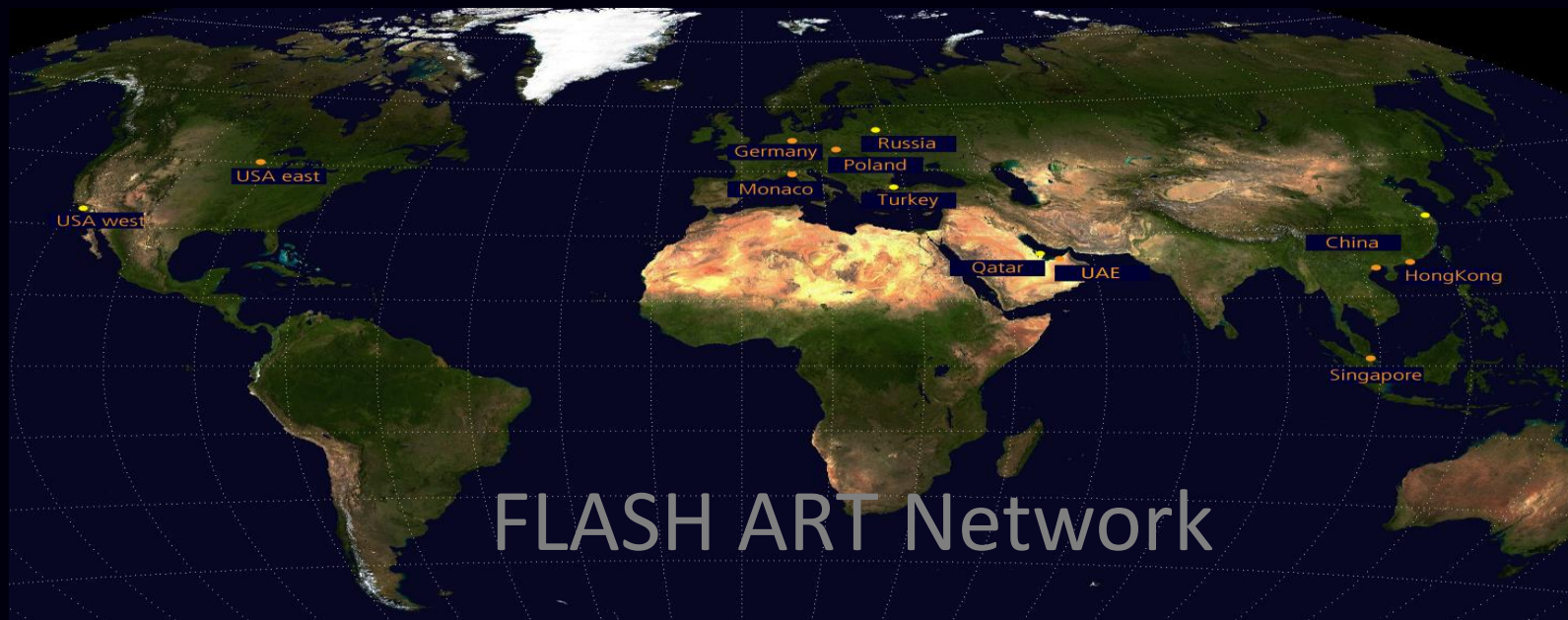
With best regards

Klaus Schaeffer (General Manager artmobile GmbH)



CREDITS

▶ 10 JAHRE RTL, KÖLN ▶ 10 JAHRE DEUTSCHE WIEDERVEREINIGUNG, BREMEN +BERLIN ▶ 25-JAHRE STARLIGHT EXPRESS ▶ 28. SEA GAMES ▶ 40 YEARS CROWN JUBILEE OF PRINCE RAINIER III., MONACO ▶ 50. JUBILÄUM GAUSELMANN ▶ 100 YEARS ARAB REVOLT CELEBRATION, JORDAN ▶ 150 YEARS V. BODELSCHWINGHSCHES ANSTALTEN, BIELEFELD ▶ 1000 JAHRE HANOI ▶ 1225 YEARS CELEBRATION, ISTANBUL ▶ ABHA FESTIVAL SAUDI-ARABIA ▶ ADIDAS ▶ TAUFGEFEIER AIDAAURA, AIDADIVA UND AIDABLU ▶ ARMED FORCES OFFICERS CLUB, DUBAI ▶ AUDI QUATTRO ▶ ATP-CHAMPIONSHIP, QATAR ▶ BALTIC SEA LIGHTS, TIMMENDORFER STRAND ▶ BARCLAYS LAUNCH, DUBAI ▶ BERTELSMANN MANAGEMENT CONGRESS ▶ BLACKSEA GAMES ▶ BLÜHENDES BAROCK LUDWIGSBURG ▶ BON JOVI EUROPEAN TOUR ▶ BUNDESVISION SONGCONTEST ▶ BURJ KHALIFA DUBAI ▶ CASTLE TOURNAMENT NÖRTEN ▶ CAPITAL OF CULTURE, STAVANGER, CLOSING EVENT ▶ CAPITAL OF CULTURE, VILNIUS ▶ CENTRAL CELEBRATIONS FOR THE EU-ENLARGEMENT, MALTA, BERLIN UND STRASSBURG ▶ CLASSIC OPEN AIR BERLIN ▶ COCA COLA ▶ CROWNING CELEBRATIONS OF PRINCE ALBERT OF MONACO ▶ COMMERZBANKARENA ▶ DAIMLER CHRYSLER ▶ DFB CUPFINALE, BERLIN ▶ DGU CONGRESS, DÜSSELDORF ▶ DIOR FIREWORK, BAD DRIBURG ▶ DOW CHEMICALS ▶ DUBAI SHOPPING FESTIVAL ▶ DUBAI WORLD CUP ▶ DUBAI BEACH POLO CLOSING ▶ EADS SUMMERFESTIVAL ▶ EID FESTIVAL, KATAR ▶ EID AL ADHA FIREWORKS SHOWS, DOHA ▶ EINWEIHUNG KANZLERAMT, BERLIN ▶ EMIR'S CUP KATAR ▶ ERÖFFNUNG ALLIANZ ARENA ▶ ERÖFFNUNG ARENA AUF SCHALKE ▶ ERÖFFNUNG HAUPTBAHNHOF BERLIN ▶ ERÖFFNUNG HAZZA BIN ZAYED STADION ▶ ERÖFFNUNG WASSERKANAL DUBAI ▶ EU-BEITRITT RUMÄNIEN UND BULGARIEN ▶ EUROPEAN CAPITAL OF CULTURE WROCLAW; POLAND ▶ EU-PREISENCE, POLAND ▶ FIFA WORLD YOUTH CUP, ABU DHABI ▶ FORMEL EINS, ABU DHABI + BAHRAIN ▶ GERMANY'S NEXT TOPMODEL ▶ GTM TOURISMUSMESSE FRANKFURT ▶ GAUDÍ MUSICAL ▶ GCC CULTURE FESTIVAL, SHARJAH ▶ GOODYEAR ▶ GOLF CUP QATAR ▶ HOEKERFEST, HERFORD ▶ HOTEL ADLON, BERLIN ▶ HUGO BOSS ▶ IFA NIGHT, FERNSEHTURM BERLIN ▶ ISTANBUL CONQUEST, TURKEY ▶ JEDDAH FESTIVAL ▶ LANXESS ARENA ▶ LIGHTS OF THE ARAB WORLD, OMAN ▶ MACAO, BEAUTY OF HARMONY ▶ MC DONALDS ▶ MICHAEL JACKSON & FRIENDS, MÜNCHEN ▶ MILLENNIUMFEIER SIEGESSÄULE, BERLIN ▶ MMC MEDIA GALA ▶ MLP INDOOR SHOW ▶ MOBILE EVENT, LITHUANIA ▶ MUSCAT FESTIVAL, OMAN ▶ NATIONAL DAY, OMAN ▶ NATIONAL DAY, DUBAI ▶ NEFF 2015 ▶ NEW YEARS EVE HONG KONG ▶ NEW YEARS EVE, MONACO ▶ NEW YEARS EVE QATAR ▶ OPENING CEREMONIES OF ZAYED UNIVERSITY, DUBAI ▶ OPENING OF AL BAVARI DEVELOPMENT, DUBAI ▶ OPENING OF THE ZABEEL SARAY HOTEL, DUBAI ▶ OPENING OF THE SINGAPORE FLYER ▶ PINK FLOYD EUROPEAN TOUR ▶ PORSCHE ▶ PYRONALE, BERLIN ▶ ROSTOCK CRUISE FESTIVAL ▶ ROYAL HORSE GALA, OMAN



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ABU DHABI NATIONAL DAY

THANK YOU