



developer guide

# Recurring Payments

heidelpay payment platform

The complete solution for Ecommerce

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## History of changes

Version	Date	Author	Comment
1.0	18.09.2009	Schuhmann	Document created
1.1	10.01.2010	Schuhmann	Update of addresses
1.2	14.08.2012	Fredrich	Minor wording corrections

### Document history

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## 1 General

This document describes how to submit and maintain recurring payments to heidelpay's payment-system using the XML-interface provided to developers.

**Please be aware of possible certification requirements for your platform**  
**(e.g. PCI DSS for credit card processing)**  
**if you decide for integrating your solution using XML**

In the latest there have been cases involving even very large companies storing information about credit-cards who have been denied by acquirers to do so any longer !!  
Contact heidelpay's support if you plan for XML-integration.

## 2 Introduction

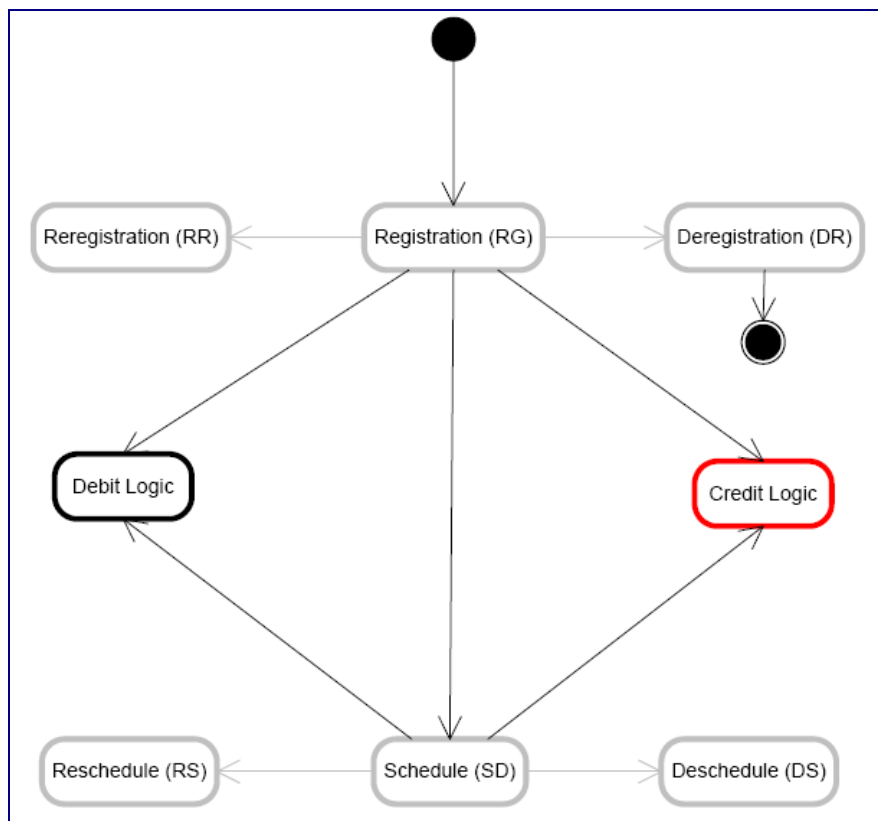
Recurrence is called the situation where one customer is not only debited once, but several times in the course of time. There is a big variety of possible scenarios where this might prove to be useful:

- Subscription to a regular or varying service
- Registration within a shop, which prevents the reentering of payment data
- Trial Periods, which require an initial registration for a possible later service

Depending on the given business case the execution of recurrent transactions can be:

- Individual or
- Automatic

Payments which follow a certain predefined schedule and which have a predictable amount can be scheduled automatically, in order to let the system generate all upcoming transactions. If the execution time or the payment amount is not steady, all payments have to be triggered individually. Any recurring transaction - independent whether it is submitted individually or automatically - always needs to refer to prior stored customer and account information. This information must be provided to the system through a so called registration transaction. The registration is the base for all later transactions and gives the freedom to add or change the recurrence behaviour totally independent of the initial information given by the customer. Like this automatic recurrence transactions, which are triggered by a schedule transaction and individual payment transactions can be mixed arbitrary. Following diagram describes this process:



## 2.1 Registration Process

Registration types can be used for all payment methods and are used for situations where specific data like account or customer information is needed for later retrieval. A registration (RG) transaction looks exactly like the corresponding preauthorisation (PA), debit (DB) or credit (CD) transaction, except that the type within the payment code is replaced by RG and there is no presentation tag with an amount and usage.

After a successful registration later preauthorisation (PA), debit (DB), credit (CD) or receipt (RC) transactions can reference to the registered information. By giving the registration attribute within the account or customer tag all subordinate tags, which would be required for a normal PA, CD or DB transaction can be omitted. The Unique ID of the registration response is used as registration reference in following PA, DB, CD or RC transactions. A reference to an account registration would for example look like this:

```
<Account registration="678a456b789c123d456e789f012g432"/>
```

Registration information can also be altered or disabled by sending in a reregistration (RR) or deregistration (DR) transaction. Registrations are automatically confirmed by a confirmation (CF) transaction by the system or on request also explicitly (currently just used for direct debit in Norway and Switzerland).

## 2.2 Scheduling Process

Payments which follow a certain predefined scheme like subscriptions can be scheduled, in order to let the system automatically generate all upcoming transactions until a deschedule (DS) transaction is sent in, which finalizes the Schedule. There are following scheduling types:

- Schedule (SD)
- Reschedule (RS)
- Deschedule (DS)

A schedule (SD) transaction simply replaces the standard type like DB, CD or PA inside the payment code attribute with SD and starts a job, which is described inside the job tag. The job tag contains all parameters which are essential to define the action, execution scheme, cancellation note and duration of the job. All scheduled transactions have the same payment and presentation tag as the initial schedule transaction; only the type attribute of the action tag - commonly DB, CD, or PA - replaces SD inside the payment code attribute.

```
<Job name="Standard Monthly Subscripton">
  <Action type="DB" />
  <Execution>
    <DayOfMonth>13</DayOfMonth>
    <Month>*</Month>
  </Execution>
  <Notice>
    <Number>3</Number>
    <Unit>DAY</Unit>
  </Notice>
  <Duration>
    <Number>3</Number>
    <Unit>MONTH</Unit>
  </Duration>
</Job>
```

## 3 Scenario Group A

- Initial duration 1, 3, 6 or 12 months
- Prolongation by initially chosen duration and amount
- Initial and later executions with 3 days delay

Scenario name	Fee duration	Initial duration	Initial price	Initial execution	Prolong. duration	Prolong. price	Prolong. Exececution
1 Month Subscription	None	1 Month	19.90	3 days delay	1 Month	19.90	3 days delay
3 Month Subscription	None	3 Months	39.90	3 days delay	3 Months	39.90	3 days delay
6 Month Subscription	None	6 Months	49.90	3 days delay	6 Months	49.90	3 days delay
12 Month Subscription	None	12 Months	79.90	3 days delay	12 Months	79.90	3 days delay

Current date for this scenario: 2010-01-10 17:00:00

### XML Requests:

1. Register Customer & Account

2. Schedule Job:

```
<Transaction mode="LIVE" response="SYNC"
  channel="678a456b789c123d456e789f012g432">
  <Identification>
    <TransactionID>MerchantAssignedID</TransactionID>
  </Identification>
  <Payment code="DD.SD">
    <Presentation>
      <Amount>19.90</Amount>
      <Currency>EUR</Currency>
      <Usage>Flirt-Abo Standard</Usage>
    </Presentation>
  </Payment>
  <Job name="Standard Monthly Subscripton">
    <Action type="DB" />
    <Execution>
      <!-- Fire at 17:00 on the 13 of every month-->
      <Hour>17</Hour>
      <DayOfMonth>13</DayOfMonth>
      <Month>*</Month>
    </Execution>
    <Notice>
      <Number>3</Number>
      <Unit>DAY</Unit>
    </Notice>
    <Duration>
      <Number>1</Number>
    </Duration>
  </Job>
</Transaction>
```

```
        <Unit>MONTH</Unit>
      </Duration>
    </Job>
    <Account registration="678a456b789c123d456e789f012g432" />
  </Transaction>
```

### 3. Deschedule Job (Cancellation):

```
<Transaction mode="LIVE" response="SYNC"
  channel="678a456b789c123d456e789f012g432">
  <Identification>
    <TransactionID>MerchantAssignedID</TransactionID>
    <ReferenceID>321413432142134</ReferenceID>
  </Identification>
  <Payment code="DD.DS">
  </Payment>
</Transaction>
```



## 4 Scenario Group B

- Initial Duration 31, 93, 186 or 365 Days
- Prolongation by 31 days and by the initial monthly average amount
- Initial execution directly after transaction, later executions with 3 days delay

Scenario name	Fee duration	Initial duration	Initial price	Initial execution	Prolong. duration	Prolong. price	Prolong. Exececution
1 Month Subscription	None	31 Days	19.90	Direct	31 Days	19.90	3 Days Delay
3 Month Subscription	None	93 Days	39.90	Direct	31 Days	13.30	3 Days Delay
6 Month Subscription	None	186 Days	49.90	Direct	31 Days	8.31	3 Days Delay
12 Month Subscription	None	365 Days	79.90	Direct	31 Days	6.65	3 Days Delay

Current date for this scenario: 2010-01-10 17:00:00

### XML Requests for first scenario:

1. Register Customer & Account
2. Debit with reference to Registration for immediate payment (not covered by job)
3. Schedule Job:

```

<Transaction mode="LIVE" response="SYNC"
  channel="678a456b789c123d456e789f012g432">
  <Identification>
    <TransactionID>MerchantAssignedID</TransactionID>
  </Identification>
  <Payment code="DD.SD">
    <Presentation>
      <Amount>19.90</Amount>
      <Currency>EUR</Currency>
      <Usage>Flirt-Abo Standard</Usage>
    </Presentation>
  </Payment>
  <Job name="Standard Monthly Subscripton" start="2010-02-10
    17:00:00">
    <Action type="DB" />
    <Execution>
      <!-- Fire at 17:00 on the 13 of every month-->
      <Hour>18</Hour>
      <DayOfMonth>10</DayOfMonth>
      <Month>*</Month>
    </Execution>
    <Notice>
      <Number>3</Number>
    </Notice>
  </Job>
</Transaction>

```

```
        <Unit>DAY</Unit>
    </Notice>
    <Duration>
        <Number>31</Number>
        <Unit>DAY</Unit>
    </Duration>
</Job>
<Account registration="678a456b789c123d456e789f012g432" />
</Transaction>
```

#### 4. Deschedule Job (Cancellation):

```
<Transaction mode="LIVE" response="SYNC"
    channel="678a456b789c123d456e789f012g432">
    <Identification>
        <TransactionID>MerchantAssignedID</TransactionID>
        <ReferenceID>321413432142134</ReferenceID>
    </Identification>
    <Payment code="DD.DS">
    </Payment>
</Transaction>
```

## 5 Scenario Group C

- Initial Duration 1, 3, 6 or 12 Months
- Initial Free Period of 31 days
- Prolongation by 31 days and by the initial monthly average amount
- Initial execution directly after transaction, later executions with 3 days delay

Scenario name	Fee duration	Initial duration	Initial price	Initial execution	Prolong. duration	Prolong. price	Prolong. Exececution
1 Month Subscription	31 Days	31 Days	19.90	After Free Period	31 Days	14.90	3 Days Delay
3 Month Subscription	31 Days	93 Days	39.90	After Free Period	31 Days	14.90	3 Days Delay
6 Month Subscription	31 Days	186 Days	49.90	After Free Period	31 Days	14.90	3 Days Delay
12 Month Subscription	31 Days	365 Days	79.90	After Free Period	31 Days	14.90	3 Days Delay

Current date for this scenario: 2010-01-10 17:00:00

### XML Requests:

1. Register customer and account
2. No debit because of free period at the beginning
3. Schedule first job:

```

<Transaction mode="LIVE" response="SYNC"
  channel="678a456b789c123d456e789f012g432">
  <Identification>
    <TransactionID>MerchantAssignedID</TransactionID>
  </Identification>
  <Payment code="DD.SD">
    <Presentation>
      <Amount>19.90</Amount>
      <Currency>EUR</Currency>
      <Usage>Flirt-Abo Standard</Usage>
    </Presentation>
  </Payment>
  <Job name="Standard Monthly Subscripton" start="2010-02-10
17:00:00"
    end="2010-03-10 16:59:00">
    <Action type="DB" />
    <Execution>
      <Hour>17</Hour>
      <DayOfMonth>10</DayOfMonth>
    </Execution>
  </Job>
</Transaction>

```

```
        <Month>*</Month>
    </Execution>
    <Notice>
        <Number>3</Number>
        <Unit>DAY</Unit>
    </Notice>
    <Duration>
        <Number>31</Number>
        <Unit>DAY</Unit>
    </Duration>
</Job>
<Account registration="678a456b789c123d456e789f012g432" />
</Transaction>
```

#### 4. Schedule second job:

```
<Transaction mode="LIVE" response="SYNC"
channel="678a456b789c123d456e789f012g432">
    <Identification>
        <TransactionID>MerchantAssignedID</TransactionID>
    </Identification>
    <Payment code="DD.SD">
        <Presentation>
            <Amount>14.90</Amount>
            <Currency>EUR</Currency>
            <Usage>Flirt-Abo Standard Extension</Usage>
        </Presentation>
    </Payment>
    <Job name="Standard Monthly Subscripton" start="2010-03-10
17:00:00">
        <Action type="DB" />
        <Execution>
            <Hour>17</Hour>
            <DayOfMonth>10</DayOfMonth>
            <Month>*</Month>
        </Execution>
        <Notice>
            <Number>3</Number>
            <Unit>DAY</Unit>
        </Notice>
        <Duration>
            <Number>31</Number>
            <Unit>DAY</Unit>
        </Duration>
    </Job>
    <Account registration="678a456b789c123d456e789f012g432" />
</Transaction>
```

## 5. Deschedule second job (Cancellation):

```
<Transaction mode="LIVE" response="SYNC"  
  channel="678a456b789c123d456e789f012g432">  
  <Identification>  
    <TransactionID>MerchantAssignedID</TransactionID>  
    <ReferenceID>321413432142134</ReferenceID>  
  </Identification>  
  <Payment code="DD.DS">  
  </Payment>  
</Transaction>
```

## 6 Scenario D

- Subscription with rising duration and payment amount.
- Initial Duration 1 Month, following Durations 3 and 12 Months
- Initial Price 19.90, following Prices 39.90 and 79.90.
- Prolongation by subsequent Duration

Scenario name	Fee duration	Initial duration	Initial price	Initial execution	Prolong. duration	Prolong. price	Prolong. Execution
Rising Subscription	1 Month	5.00	3 Months	39.90	12 Months	79.90	

Current date for this scenario: 2010-01-10 17:00:00

### XML Requests:

1) Register customer and account

2) Debit EUR 5.00 with reference to registration

3) Schedule first job:

```
<Transaction mode="LIVE" response="SYNC"
  channel="678a456b789c123d456e789f012g432">
  <Identification>
    <TransactionID>MerchantAssignedID</TransactionID>
  </Identification>
  <Payment code="DD.SD">
    <Presentation>
      <Amount>39.90</Amount>
      <Currency>EUR</Currency>
      <Usage>Flirt-Abo Standard 3 monate</Usage>
    </Presentation>
  </Payment>
  <Job name="Standard Monthly Subscripton" start="2010-02-10
17:00:00"
    end="2010-05-10 16:59:00">
    <Action type="DB" />
    <Execution>
      <Hour>17</Hour>
      <DayOfMonth>10</DayOfMonth>
      <Month>2</Month>
      <Year>*</Year>
    </Execution>
    <Notice>
      <Number>3</Number>
      <Unit>DAY</Unit>
    </Notice>
    <Duration>
      <Number>3</Number>
      <Unit>MONTH</Unit>
    </Duration>
  </Job>
```

```
<Account registration="678a456b789c123d456e789f012g432" />
</Transaction>
```

#### 4) Schedule second job:

```
<Transaction mode="LIVE" response="SYNC"
  channel="678a456b789c123d456e789f012g432">
  <Identification>
    <TransactionID>MerchantAssignedID</TransactionID>
  </Identification>
  <Payment code="DD.SD">
    <Presentation>
      <Amount>79.90</Amount>
      <Currency>EUR</Currency>
      <Usage>Flirt-Abo Standard Extension 12
monate</Usage>
    </Presentation>
  </Payment>
  <Job name="Standard Monthly Subscripton 12 monate" start="2010-
05-10 17:00:00">
    <Action type="DB" />
    <Execution>
      <!-- Fire at 17:00 on the 10th of may every year-->
      <Hour>17</Hour>
      <DayOfMonth>10</DayOfMonth>
      <Month>5</Month>
      <Year>*</Year>
    </Execution>
    <Notice>
      <Number>3</Number>
      <Unit>DAY</Unit>
    </Notice>
    <Duration>
      <Number>12</Number>
      <Unit>MONTH</Unit>
    </Duration>
  </Job>
  <Account registration="678a456b789c123d456e789f012g432" />
</Transaction>
```

#### 5) Deschedule Job (Cancellation)

```
<Transaction mode="LIVE" response="SYNC"
  channel="678a456b789c123d456e789f012g432">
  <Identification>
    <TransactionID>MerchantAssignedID</TransactionID>
    <ReferenceID>321413432142134</ReferenceID>
  </Identification>
  <Payment code="DD.DS">
  </Payment>
</Transaction>
```

## 7 Scenario E

- Initial (minimum) duration of 12 Months with 2 weeks notice until duration end
- Monthly subscription 19.90 per month
- Prolongation by 3 months (quarter) with 2 weeks notice until end of quarter
- Current date for this scenario: 2010-01-10 17:00:00

### XML Requests:

1. Register customer and account
2. Debit EUR 19,90 with reference to registration
3. Schedule first job:

```
<Transaction mode="LIVE" response="SYNC"
  channel="678a456b789c123d456e789f012g432">
  <Identification>
    <TransactionID>MerchantAssignedID</TransactionID>
  </Identification>
  <Payment code="DD.SD">
    <Presentation>
      <Amount>19.90</Amount>
      <Currency>EUR</Currency>
      <Usage>Flirt-Abo Standard 3 monate</Usage>
    </Presentation>
  </Payment>
  <Job name="Standard Monthly Subscripton 12 monate" start="2010-
02-10 17:00:00"
    end="2006-02-10 16:59:59">
    <Action type="DB" />
    <Execution>
      <!-- Fire at 17:00 on the 13 of every month-->
      <Hour>17</Hour>
      <DayOfMonth>13</DayOfMonth>
      <Month>*</Month>
    </Execution>
    <Notice>
      <Number>2</Number>
      <Unit>WEEK</Unit>
    </Notice>
    <Duration>
      <Number>1</Number>
      <Unit>YEAR</Unit>
    </Duration>
  </Job>
  <Account registration="678a456b789c123d456e789f012g432" />
</Transaction>
```



#### 4. Schedule second job:

```
<Transaction mode="LIVE" response="SYNC"
  channel="678a456b789c123d456e789f012g432">
  <Identification>
    <TransactionID>MerchantAssignedID</TransactionID>
  </Identification>
  <Payment code="DD.SD">
    <Presentation>
      <Amount>19.90</Amount>
      <Currency>EUR</Currency>
      <Usage>Flirt-Abo Standard Extension 12
monate</Usage>
    </Presentation>
  </Payment>
  <Job name="Extended Monthly Subscripton" start="2006-02-10
17:00:00">
    <Action type="DB" />
    <Execution>
      <!-- Fire at 17:00 on the 13 of every month-->
      <Hour>17</Hour>
      <DayOfMonth>13</DayOfMonth>
      <Month>*</Month>
    </Execution>
    <Notice>
      <Number>3</Number>
      <Unit>DAY</Unit>
    </Notice>
    <Duration>
      <Number>3</Number>
      <Unit>MONTH</Unit>
    </Duration>
  </Job>
  <Account registration="678a456b789c123d456e789f012g432" />
</Transaction>
```

#### 5. Deschedule job (Cancellation)

```
<Transaction mode="LIVE" response="SYNC"
  channel="678a456b789c123d456e789f012g432">
  <Identification>
    <TransactionID>MerchantAssignedID</TransactionID>
    <ReferenceID>321413432142134</ReferenceID>
  </Identification>
  <Payment code="DD.DS">
  </Payment>
</Transaction>
```

## 8 Scenario F

### ***Subscription for a newspaper***

- Execution is always at the beginning of a quarter (EUR 45.99) i.e. always at January 1<sup>st</sup>, April 1<sup>st</sup>, July 1<sup>st</sup>, October 1<sup>st</sup>.
- Initial debit amount is calculated dynamically
- A cancellation is callable anytime with 1 week notice period, the remaining amount is refunded
- Current date for this scenario: 2010-09-10 17:00:00

1. Register customer and account

2. Debit EUR 40.88 (45.99 / 90days \* 80days) with reference to registration

3. Schedule job:

```
<Transaction mode="LIVE" response="SYNC"
  channel="678a456b789c123d456e789f012g432">
  <Identification>
    <TransactionID>MerchantAssignedID</TransactionID>
  </Identification>
  <Payment code="DD.SD">
    <Presentation>
      <Amount>40.88</Amount>
      <Currency>EUR</Currency>
      <Usage>Zeitungs-Abo erstes Quartal</Usage>
    </Presentation>
  </Payment>
  <Job name="Standard Monthly Abo" start="2010-09-10 17:00:00">
    <Action type="DB" />
    <Execution>
      <!-- Fire at 0:00 on the 1 of Jan, Apr, Jul and Oct -->
      <DayOfMonth>1</DayOfMonth>
      <Month>1,4,7,10</Month>
    </Execution>
    <Notice>
      <Callable>ANYTIME</Callable>
      <Number>1</Number>
      <Unit>WEEK</Unit>
    </Notice>
  </Job>
  <Account registration="678a456b789c123d456e789f012g432" />
</Transaction>
```

#### **Attention:**

You will not get the desired result if you specify The Month tag like this:

```
<Month>9/3</Month>
```

This will only execute the job on October 1<sup>st</sup> every year!

#### 4. Deschedule Job (Cancellation)

```
<Transaction mode="LIVE" response="SYNC"
  channel="678a456b789c123d456e789f012g432">
  <Identification>
    <TransactionID>MerchantAssignedID</TransactionID>
    <ReferenceID>321413432142134</ReferenceID>
  </Identification>
  <Payment code="DD.DS">
  </Payment>
</Transaction>
```

#### 5. Credit transfer (CT.CD) with amount, which was debited in excess